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TONS OF **TIPS** FOR YOUR MACHINE
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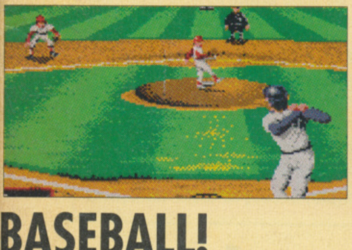

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AMSTRAD'S SECRET PCWs!

EXCLUSIVE!

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CDTV: you've read the hype now see the reality.
Read the *Express* field test – pages 55 & 56

Future PUBLISHING
Your guarantee of value

Frontend

What a twisty turny thing the world is and here at Frontend we show you just how weird things can get if they really try

HOME HELPING CHIPS MAKE DOMESTIC BLISS

Since the 1950's when cartoon characters were sent scurrying by a manic carpet cleaner, the dream of the robot-run house has long been cherished.

Now the dream is closer to becoming a reality for the person in the street. Californian company, Echelon has announced the development and testing of a new chip which, the company claims, can link basic household appliances.

Called the 'Neuron', the chip is able to create Local Operating Networks (LONs). These LONs effectively link appliances so that they run in pre-defined harmony.

For example, you could set up your stereo (or CD-I player, or CDTV) to begin playing your favourite, most relaxing tune, as soon as you hit the switch which opens your garage door at the end of the day.

Unlike previous systems which have been put on test in show homes throughout the States and Japan, Neuro technology is looking to go big league with licensing deals already having been signed with Motorola and Toshiba.

Neuro is also making positively evangelistic noises about the potential of its system.

Echelon's european business development director, Richard Kagan is claiming: "We are aiming to have 95 per cent of all the electrical appliances on the planet using our Neuron chips". We can only wait and see, as always. ■

HACK WORMS

Cyberpunk: Outlaws and Hackers on the Computer Frontier is new book published in the United States, and as yet unavailable in this country.

Written by Katie Hafner and John Markoff, it is already selling well in the cyber-conscious States. It details examples of hacking such as the infamous Internet Worm which was allegedly placed into major systems by Robert Morris. In fact the book has been called in Morris's trial in the US Supreme Court. It is also to be one of the main topics of discussion at major meeting in New York entitled Hackers, Computer Crime and First Amendment Issues. ■

GET REAL! • GET REAL! • GET REAL! • GET REAL! •

BLACK CHIP

Traditional farming techniques of planting the 13 acre field on the 15th of month after the village idiot has turned three widdershins may be numbered if the University of Hawaii's new program to tell farmers correct planting times and crop yields has more money ploughed into it. The program is already a hit in the US.

GET THE MOST OUT OF YOUR AMIGA

If you've got an Amiga or you're thinking of buying one – don't miss next week's *New Computer Express*, or you'll miss out on a 24 page colour supplement covering everything you need to know about the Amiga.

Art, DTP, Amiga DOS, programming, upgrading, beginners,business, COMMS and hardware – it's all up for grabs. FREE! ■

Acorn gets Whitbread best

• Can British athleteslike Fatima Whitbread possibly hope to keep up with the pace of the Acorn Archimedes? With a six figure sum as incentive, maybe.

Acorn Computers, the company responsible for the super-quick, RISC (reduced instruction set computing) based Archimedes has signed what could be a six-figure deal with javelin throwing champess, Fatima Whitbread's athletics club.

The Thurrock, Essex-based Chafford Hundred Athletic Club numbers not only Fatima amongst its stars, but also Linford Christie, Colin Jackson, Steve Backley and John Regis all of whom have represented their country at international competition level. The deal means that you will get to see sports people at Acorn sponsored events. They will also endorse Acorn products in advertising material.

Not only does the athletics club get the much needed spondolics, it will also use the publicity to further the careers of up and coming sportschildren. According to Ms Whitbread: "We are keen to encourage young athletes to develop, especially those who are from disadvantaged backgrounds". ■

• Sports reporting isn't all cliché, sick parrots and over-the-moon 120 per cent scenarios. If you have the 'write' equipment and a fresh attitude you could change the face of John Motson as we know it. And Tandy might be pleased to offer you the means to this end.

Cub Reporters

Students from West Yorkshire are getting a taste of the reporter's life with a little help from electronics giant, Tandy.

They are being supplied with 24 Tandy WP2 portable word processors to go out and gather news at the World Student Games currently being held in Sheffield.

Each day they return to the classroom with the WP2s and download their reports and interviews to a host PC which is then used to produce a *Sharing The Games*, a daily newspaper for the games event.

Each day, the editorial team comes from a different school and they are competing to see who can turn out the most professional results.

Output for *Sharing the Games* is by a laser printer with basic computer graphics being used to break up the page with illustrations. ■

AND THE CLOCK STRUCK THIRTEEN

In probably the most hi-tech and Orwellian time and motion study ever, staff at Olivetti's Cambridge research labs are being monitored by means of tiny, infra-red 'active badges'.

This has lead civil rights campaigners, Liberty (formerly The National Council for Civil Liberties) to warn that such a system could be misused.

Liberty is claiming that, because there are no safeguards on the system it might well be used to invade the privacy of individual members of staff as they go about their everyday business.

The badges which are similar to those currently being tested on criminals in the US, measure 5cm by 5cm by 0.5cm, and work in unison with transceivers placed around the building.

Basically the system keeps an 'eye' on Olivetti by logging staff movements and storing the constantly updated data on Local Area Network (LAN)-based PCs and workstations. Apparently the wearing of badges is optional. And one member of staff has been reported as saying that they don't really matter because: "Everyone trusts everyone else". Who said they didn't? ■

BIG BRUCE IS WATCHING

It is not only Olivetti which is monitoring people on a daily, even hourly basis (see And the Clock Struck Thirteen), the authorities in Perth, Australia also feel the need to keep on eye on their citizens.

The city fathers have decided to expand their computer-controlled traffic surveillence systems to keep track of pavement bound pedestrians.

This has lead to outraged cries from civil liberties origanisations which object to the 25 cameras system that is capable of keeping a weather eye on the Perthonian's perambulations on a 24 hour basis.

The campaigners are all the more irate due to the fact that the privately run system has been specifically barred from snooping on passers-by since its inception as a traffic control device back in the 1960s. However, nine out of ten citizens said they did not object. ■

Eastern robotics • Household chips • Arc gets sporty • Are you

Far Eastern robots slip floppy disks

A new 250,000 foot-square factory has been set up in Singapore to manufacture floppy disk drives. "Big deal" you say. Well it is if you consider that it is the first of its kind to be 'manned' entirely by robots.

According to a Lynda Orban, a spokeswoman for Western Digital: "The new plant can produce 5,000 drives a day, a new drive every 15 seconds... '

The factory which belongs to Western Digital does not have a single human-run operation, is also the first new facility to be set-up by the company since the closure of its Puerto Rico plant in December 1990.

Just what the robots think of the situation has not been reported as yet. ■

• Robots have come al long way from rescuing the damsel in distress – now they are running whole factories.

COMPUTER CALAMITIES

Come on then! Send your tales of computer-related chaos and catastrophe to Computer Calamities, *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW and we'll pay a fiver if its printed.

This week, Mike Bruce of Esher reminds us that virtual reality is merely virtual with the tale (apocrphyal we wonder?) of the Japanese test driver who drove home following a few hours of putting a VR car through its paces. He hadn't quite clicked back into real-reality, and crashed into a tree which he was sure would simply melt away. ■

GET REAL! • GET REAL! • GET REAL! • GET REAL! •

SAFEWAY DEPOSIT

You've heard the myth of the paperless office, now prepare for the paperless supermarket. Safeway is trying a computerised pay system in Colorado which does away with cheques and cash. Customers are issued with special cards which automatically debit their bank accounts. The whole thing takes five seconds.

The BR black box

British Rail is currently testing out a new warning system, called Automatic Train Protection (ATP) similar to the black box system used in aircraft.

ATP is being put through its paces on two of BR's commercial lines, one between London Paddington and Bristol, and one between London Marylebone and Aylesbury.

The new warning system is able to control the way in which a driver actually controls a train. Using the present system, a driver can see, and even acknowledge a signal, and can then go straight through it without understanding its meaning. ATP can override any such response. It does this by monitoring both the signal and the driver's reactions to it.

The black box angle of ATP keeps a record of all data received in the cabin, as a well as a variety of the train's basic operations such as door opening and closing, and the minute by minute workings of the loco's traction systems.

Data collected in this way can be used in enquiries following such disasters as the Clapham tragedy, and the more recent crash just outside of Glasgow, Scotland.

Network South East is already planning to invest some £5 million in the system which is to be installed in engines travelling the routes between Liverpool Street and Cambridge, and Euston to Northampton. No date has as yet been announced for a full national implementation of ATP. ■

• What is the similarity between a BR locomotive and a Boeing 747? Well some might say that the fares are not too far off! But more to the point, BR is now adopting a black box data recording system.

SHOOT FROM THE LIP

"So we won't be entering the console market in the UK. The games are more expensive and there is no educational benefit"

Commodore UK's managing director speaking to The Independent on Sunday about the biggest mistakes he has made. See page 4 for the full and startling details.

'Now the omnipotent force in the booming UK video games market, world leader Nintendo moves into top gear this month...'

According to the office Chambers' English Dictionary, Omnipotency means 'unlimited power' and Omnipotent means 'all powerful'. Maybe the person who wrote this over-zealous press release should have kept their eye on the recent Nintendo versus Galoob Toys court case about the Game Genie – which the all powerful Nintendo lost.

"We won't rip up the IBM company in a bad economic cycle. But after six years with one approach... it's time to try another"

IBM's chief executive officer, John Akers explaining his ideas for corporate strategy to his staff following the Apple Computers deal, and before the declaration of a 92 per cent drop in profits for the vast corporation.

You being watched? • BR black box

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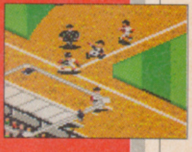

Pump up your PC!
A 25MHz SOTA board is up for grabs

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Commodore's Steve Franklin gives candid interview

C64GS IS A DISASTER!

"I'm sorry, we cocked it up in the UK". So says Commodore's (UK) managing director Steve Franklin in an interview with the *Independent On Sunday*.

During the interview Franklin slammed the C64GS as "absolutely disastrous". He also stated that his company "... would not be entering the console market in the UK".

Franklin bared his soul about various mistakes which he has made since joining the company in 1987. Asked what his biggest mistake had been, he replied: "... trying to sell home computer packages containing non-computer-related products". Then he gave a list of three specific examples:

- The C64GS – Franklin is particularly penitent about the stripped down version of Commodore's highly successful 8-bit C64. "We were under a bit of pressure because consoles have taken off in America. So we took our C64 computer, designed a plastic mould round it to look like a console, and manufactured 80,000 for the UK market, retailing at £99. We spent £150,000 on marketing and again it was absolutely disastrous; we sold about 15,000'.

• Steve Franklin, managing director of Commodore owns up to some skeletons in his corporate cupboard.

- Packaging British Airways Air Miles vouchers with the £499 Air Miles summer Amiga bundle. The £499 package included *Who Framed Roger Rabbit?*, *Starray* from Logotron, Hewson's *Nebulus*, and the *Spritz* paint package from Best Publishing. According to Franklin: "We bought enough (Air Miles) for 25,000 packages (£120,000 worth to be exact) and we spent about £100,000 on advertising. It was a disaster; I think we sold 5,000 in total".

- The 25,000 C64 Home Entertainment pack which was bundled with guitar synthesisers and personal stereos. "It was another disaster. We sold about 7,000", said Franklin.

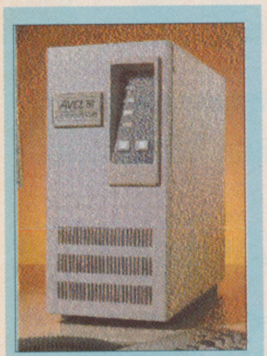
However, a stroke of historical luck enabled the company to get shot of the personal stereos. "When the Berlin Wall came down, the first thing they wanted to buy was personal stereoes. There was a great shortage, so we managed to get rid of them," said Franklin.

This did leave some 18,000 guitar synths littering the warehouses, though. ■

FRANKLIN REPLIES

Speaking about the interview, Franklin told *Express* :"Most people (who took part in the regular series of interviews) only admitted to one mistake, I talked about three. It did not do us any harm. In fact I think that some other people in the industry could get some good from it. After all, if you make mistakes but remain as profitable as Commodore, then you should talk about them, you should learn from them. "

In terms of the Commodore's plans for the C64 and console, he was equally positive: "We have decided not to go ahead with the console. However, there are some very, very exciting plans for the C64 home computer this Christmas. I can't comment on them further, but they are probably the most exciting plans for the machine in five years".



Power savers

How many times have you been sitting word processing or programming when the power to your computer is suddenly cut before you've saved your work? Now a range of small uninterruptible power supplies (UPSs) has been released to help prevent such events from occurring.

Avel-Lindberg has launched the Micropower range of UPSs which will protect computers from power cuts, spikes and surges and other similar unwanted interruptions.

There are three small-sized models which cover 1, 3 and 5kVA. When power is affected in any of the above ways then the UPSs' internal batteries will provide full power cover from between 8 to 15 minutes depending on the model. And if extra time is needed, external battery packs are available.

To get more details, call Avel on 0708 853444. ■

Mensa for Amiga users

Matthew Grossman has formed a Commodore Amiga user's group with a difference – this one's for Amiga users with a very high IQ. Not surprisingly, he's called it the Amiga Users Mensa Sig.

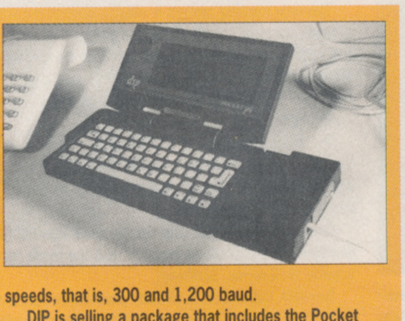
The Sig (special interest group) is now operation on the Amiga area of the Compuserve on-line system. Plans call for the group to produce a paper newsletter and sign up off-line users across the US and from around the world.

According to Grossman, he's not aiming to form an elitist organisation, as Mensa is viewed by many, but merely use the Mensa tag to form a high-powered user group for the Amiga. Because of this, he allows mere mortals with IQ levels lower than 140 to join the user group as associate members.

Contact: Matthew Grossman, PO Box 275, Slingerlands, NY 12159, USA.

E-mail: 73367,3051 on Compuserve or via Usenet on 73367,3051@compuserve. ■

Pocket full of tricks



By using Andset's Pocket Modem, the Distributed Information Processing (DIP) Pocket PC and Atari Portfolio can now communicate with any other modem-equipped computers.

The Pocket Modem was designed specifically for both these computers and connects to their expansion ports. It uses the battery power of the machines, so no external power supplies are needed.

Communications software comes with the modem that provides VT52, VT100 and TeleType terminal emulations, and enables file transfers with the Kermit, Xmodem and ASCII protocols. The modem itself is BABT approved and can operate at the CCITT V21 and V22 speeds, that is, 300 and 1,200 baud.

DIP is selling a package that includes the Pocket Modem, Pcket PC, 32K memory card, carrying case and spare batteries for £469.94. This offer is only available until September 31. For further details, call DIP on 0483 301555. ■

Open all ours

Audiogenic has signed the European distribution rights for *Personal Pro*, an 'interactive golf tutor' for the PC.

Personal Pro is published by Microware Sports of Delaware.

The program asks the user questions to determine how well they play, and then analyses the data to provide a checklist of faults and how to solve them. Animated sequences help to demonstrate potential solutions.

Golf players can buy the program now for £39.95. For more information, call Audiogenic on 081-424 2244. ■

Reds get under the text

The latest version of ORFO, a Russian grammar and spelling checker, is now available for the PC. It has been developed by Informatic, of the USSR, and Natural Language Tools, US.

Version 2.3 has, amongst other features, an improved way of adding words to the checker. The highly inflective nature of the Russian language means that most Russian words have many more different forms from the equivalent English word. By answering three or four questions, a single word can be added to the word list and will be checked to see if it conflicts with other words. Then, when a user wants to replace one word form with another, only a single form has to be chosen.

The grammar and spelling checker is compatible with many word processors, including *Word Perfect* and *Microsoft Word*. It also features a three million word dictionary, made up of 200,000 word stems. The program requires a PC with more than 640K and a hard disk with at least 1Mb free.

ORFO is available from EngRus Software, on 0223 248916. ■

It's the Monster mash

The Monster Stereo Sampler for the ST comes from the same people who produced the Monster Stereo Cartridge

It is able to sample from a domestic CD player, a personal stereo or Hi-Fi. Once captured, sounds can be modified in true stereo. Because of some innovative programming techniques, the Monster makes little call on memory. For example, owners of 520K machines will have 425K in which to store samples.

The product also features real-time altering compression which enables users to sample at high frequencies, then crunch the resulting data by up to ten times while retaining clarity

It can also automatically split large samples and save them on several disks. If you have 2Mb worth of sample, it can save 800K on one disk, then format another two and save the remaining data on them.

Aside from these 'extras' it has all the standard sampling functions including full volume control, screen cross fade, pan, oscilloscopes and output in mono or stereo. The program also makes extensive use of the STEDMAchip.

There's no price yet, but it's likely to be under £80. For info ring MPH 0603 503382. ■

Speedy Amiga hard drives

Protar has released the A500HD line of hard drives for the Amiga 500 which, the company claims, are up to five times faster than Commodore's A590.

The basic model, which is a 20Mb drive, costs £279, while at the top of the range is a 160Mb model priced at £939. RAM memory can be expanded up to 8Mb on all of the drives, while cache memory can also be added, to speed up data throughput further.

Aesthetically, the A500HD is like the A590 and many of its other features are similar as well. A SCSI port is included to enable the daisy-chaining of SCSI peripherals, such as other hard drives or tape back up units.

For games players, a switch on the drive fools games software into thinking the drive isn't there – often many games don't like having a hard drive connected.

Protar can be contacted on 0923 54133. ■

You'll just lap this one up!

Amstrad is launching two upgraded versions of its ALT laptop PCs. It is also cutting the price of the existing models.

The new machines will be on sale as you read this in the following configurations: ALT-286 with 40Mb hard drive at a price of £1,878.82. The ALT-386SX with 2Mb of RAM and an 80Mb hard disk which costs £2,348.82.

Price cuts for the older versions are as follows: the 40Mb hard drive 386SX falls from £2,348.82 to £1,996.32, while the 20Mb 286 drops from £1,878.82 to £1,526.32. ■

Express exclusive – Amstrad's new launches expected in September

THE PCW IS REBORN

Amstrad is to launch two new PCWs, the 9512 Plus and the 9256. It is also to kill off the 8000 range of machines, the 8256 and 8512, *Express* can exclusively reveal.

3.5-INCH DRIVES

Although few details are available as yet, a spokesman for Amstrad's public relations company, Michael Joyce Associates told *Express*: "The new machines are the 9512 Plus and the 9256. The main changes to the range will be that the 3-inch drives will be dropped in favour of Sony standard 3.5-inch drives manufactured by Citizen. There will also be a new styling".

While final release dates for the machines have not been confirmed, it is expected that the Business Computing '91 Exhibition in September will be the venue for the launch.

ONE ALREADY SIGHTED

It is known the machines are well past the development stages, and are already in production awaiting final shipment early in 1992. One development machine has already been seen in the UK.

The main change to the PCW, the addition of 3.5-inch disk drives, is not unexpected. The 3-inch floppy drives used in the older PCWs, and also used in the Amstrad CPC and Spectrum ranges, have been in short supply for well over a year. Far Eastern manufacturers have turned production lines over to the 3.5-inch versions which are commonly used in PCs, Macs, STs and Amigas.

CP/M RETAINED

In terms of software support, the cheap-to-licence CP/M operating system, seen by most people in the industry as archaic has been retained albeit in its latest version. This version is able to support both the new floppies, and hard drives.

Prices for the new machines have not, as yet, been confirmed.

Bundled software, according to the spokesman: "... will be *LocoScript* which will be loaded from disk'.

YES, WE HAVE NO COMMENT

Locomotive Software's technical director, Richard Clayton, offered a strong "No comment" on the possibility of a Locomotive/Amstrad collaboration on the new machines. "If Amstrad was launching new machines, and we were working on them then we would not be able to comment," he explained.

A spokesman for Michael Joyce Associates said: "The decision as to when to launch the machines has not been made. And, although this is unconfirmed, post-September looks likely".

IT'S GOODBYE TO THE 8000S

So what is there in terms of the future, or lack of it, for the 8256 and 8512 PCWs the spokesman for Michael Joyce Associates told *Express*:

"It looks as if the 8000 series is being dropped". ■

Detailed: the new PCWs

Although both Amstrad and its press and public relations company were reticent about commenting definitively on the exact specifications of the new PCWs, we have been able to track down the basic details which are as follows:

- **Two new machines – the 9512 Plus and the 9256**
- **Both machines will have space for two 720K 3.5-inch drives produced by Citizen.**
- **The 9512 Plus will come with a parallel/Centronics interface to take a daisywheel printer.**
- **The 9256 will have a custom interface to take an as yet unnamed "captive printer".**
- **Both machines with paper-white screens.**
- **Both machines will retain Digital Researches CP/M operating system. However this will be configured to a new version which might mean that programs such as *Mini Office Professional* will not run in its present state.**
- **The version of the CP/M operating system adopted for the new PCWs supports both the 3.5 and 5.25-inch drive configuration and hard drives.**

From PCW to PC and back again

Not only has the news broken that two new PCWs are on the way, both with 3.5-inch drives, but co-incidentally, it has been announced that Locomotive has upgraded its *LocoLink* software.

LocoLink enables users of PCs and PCWs to transfer text files between their respective machines.

In the case of *LocoScript* and *LocoScript PC* files this means that you can retain the formatting codes, such as italics and emboldening, so laboriously placed in the text.

The new bundle comes with 'disk management' software and a cable which fits into the PCW's expansion slot and the PC's printer port.

When both machines are connected via the cable each can see the other as a disk drive and thus transfer the data.

Price is £29.95, or £14.95 for an upgrade.

Locomotive Software is on 0306 740606. ■

Sound investment

While most people think the Amiga's sound capabilities are already very good, they can now be improved even further with Omega Project's Sound Enhancer.

The Sound Enhancer is a hardware add-on that uses a filtering system to boost the Amiga sound chip's high frequencies, bypassing the low-pass filter which is fitted as standard to all Amigas.

The result, in terms of sound quality, is a flat frequency response between 8 and 22KHz which, the company claims, improves all types of Amiga music.

Omega Projects demonstrated a prototype of the Sound Enhancer at the 16-Bit Show, and it is now available commercially for £34.95.

To get further details call Omega Projects on: 0925 763946. ■

SONY
COMPUTER GRADE
DDS
60M
DATA CARTRIDGE
5CL
CLEANING CASSETTE

It's cool for DATs

It just won't lay down and die! Sony's Digital Audio Tape (DAT) has found a new incarnation in the form of DDS (Digital Data Storage).

DDS cartridges now come in two formats: 2 gigabytes worth of data storage on 90 metres of tape, or 1.3Gbs worth on 60 metres. The carts' don't need to be formatted and are supported by Wang, Sun, ICL and DEC among others. For more information call Sony on 0784 467000. ■

NIBBLES

Scan with your Arc

DT Software has packaged two Epson flatbed scanners for use with the Archimedes.

The two scanners are Epson's GT-4000 and GT-6000 which come with custom high-speed parallel interfaces. The GT-4000 can scan at up to 400 dots per inch (dpi) and costs £1,299, while the GT-6000 can scan at 600 dpi and is £1,699.

DT Software can be reached on 0223 841099.

New Arche ranges

Computer manufacturer Arche has launched two new product ranges.

The Windows Power Series is a range of 386DX and 386SX machines specifically designed to run Microsoft Windows. And the other new range, the Arche SI Series, consists of 286 and 386SX models which include a single 3.5-inch drive, 1Mb of RAM and VGA graphics.

For more info, call Arche on: 0602 862700.

Microsoft books

Microsoft Press has announced five new titles, all based upon the latest version of MS-DOS, version 5.0.

The books are: *Running MS-DOS; Running MS-DOS QBASIC; MS-DOS QBASIC Programmers Reference; MS-DOS Quick Reference;* and *MS-DOS Batch Files Quick Reference.*

To get more information, contact Microsoft on 0734 391123.

Mac-in-DOS

A new version of Mac-In-DOS, the program that transfers data between the Macintosh and PC, has been released by Pacific Micro in the US.

It can now run under Windows 3.0 and, claims the company, is able to format Mac disks in a PC drive. Text, binary and graphics files can also be exchanged between the two formats.

Pacific Micro can be reached on 0101-415-948-6200.

A million in 3D

Domark has announced that *3D Construction Kit* has broken the £1 million mark.

This figure is based on retail sales of the product in both the UK and Europe. The Commodore 64 version, which was launched at the end of July, does not figure in the amount, and the company expects sales of the product on this machine will further increase the sum.

Domark can be called on 081-780 2222.

Offenders named in Parliament

In his seventh annual report to Parliament, the data protection registrar, Eric Howe, has named companies which have been prosecuted for contravention of the Data Protection Act 1984.

Mr Howe said: "I gave fair warning that I would begin naming organisations who were prosecuted. During the 12 months to 31 May 1991 covered in the report, 17 organisations were taken to court and all but three were found guilty and fined. Surprisingly, well-known names are among the offenders and publishing these should encourage others to ensure conformance with the requirements of the Act".

The organisations included Levi Strauss (UK) Ltd, the Church of Scientologists, The Spectator (1828) and Leicester City Council.

The Football Association was also taken to court but the jury gave it a conditional discharge for two years. The Halifax Building Society was also investigated, but the jury was directed by the judge to acquit.

Also mentioned in the report is the concern of the registrar about the security and confidentiality of individual health records as they pass through the massive National Health Service computer system.

Howe was scathing about the state of the health system's computer policy. "The department of health has not supported a statutory strengthening of the data protection principles in respect of medical confidentiality," he said.

However, he continued in more optimistic vein: "The department (of health) is working on draft non-statutory guidance. My staff are already contributing to a Council of Europe working party, which is considering appropriate safeguards for personal health information". ■

• Data protection registrar Eric Howe's report to Parliament was scathing about lapses in the security and confidentiality of the national health system's computer records.

Novell repels takeover bid by joining Digital Research

MERGER MANIA FOR PC MARKET

The PC market is going merger mad. This week's corporate confluence involves Novell and Digital Research (DR).

DR, responsible for the first personal computer operating system standard, CP/M, and also for DR DOS, is now a wholly-owned subsidiary of Novell.

Although the deal has been agreed in principle by both boards of directors, the final details have to be agreed by Digital Research shareholders. Once this has been approved, it is expected that the conclusive agreement will be signed in October.

In the event that DR shareholders oppose the bid, the company has promised to pay Novell an undisclosed sum in compensation.

Novell, which is the market-leader in the production of Local Area Networking (LAN) equipment, is rumoured to be under threat from a takeover bid from software giant Microsoft.

Novell has been setting great store by DR's DOS capabilities. In a press release to announce the deal, its chief executive proclaimed: "Novell is welcoming a talented organisation with technology leadership not only in DOS products, but also forward looking expertise in multi-tasking and graphical user interface technology."

The deal with Digital Research could mean that Novell has some insurance against any hostile bids from Microsoft. The reason for this is that Novell will hold an IBM compatible operating system in the form of DR DOS, which currently has an estimated 15 per cent of the market. ■

NetWare
NetWare
NetWare
NetWare

• The PC market is subject to more overtakers than the Indie 500 at the moment. Last week it was Borland and Ashton Tate, this week, it's Novell and Digital Research.

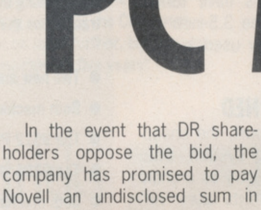
Wanted: Sam Coupé demos

It is not just Amiga owners who get the chance to enter high-profile competitons for graphics and sound productions. Now users of the Sam Coupé have a chance to show off their prowess.

Cheztron Software, which publishes the *Outlet* disk magazine (see the Spectrum machine specific column on page 20 for more info), is offering £100 for the best graphics and/or sound demo for the Sam.

Outlet is offering £10 prizes for each demo published and the first prize will go to the demo the editors of *Outlet* like best.

Send your entries to:
Cheztron Software, 605 Loughborough Road, Birstall, Leicester LE4 4NJ. ■



• Not just the sam old story. 8-bit owners can win heaps of cash prizes in a Sam-related challenge.

It's just a token

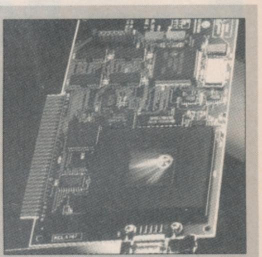
Pilkington Communication Systems claims that it will take only four minutes to install and set up its Model 1101 Token Ring network adapter card in a PC.

The card is suitable for 4Mb or 16Mb per second Token Ring networks complying with the IEEE 802.2 and 802.5 standards.

The adapter card comes with software that configures it to suit the specifications of the computer it is used on.

According to the company, the size and low power consumption of the card enable it to be used in laptops as well as desktop PCs.

The Model 1101 is available now for around £495. For more information, call Pilkington on 0745 589224. ■



Games houses and distributors blame each other

8-BIT SOFTWARE PRICES TO RISE

Owners of 8-bit machines beware, the minimum price for budget games is set to become £3.99 across the board this month.

Confusion reigns over the reasons for this, with software houses blaming retailers and distributors, and vice versa.

To add to the mish-mash of opinion, independent dealers are unhappy with the possible rise and are apparently pressurising the software houses into retaining the £1.99 and £2.99 prices currently available.

The public, who may now have to pay more for their software, won't benefit from the increase – in fact things could get worse. As far as original produced software is concerned, co-founder of Code Masters, Richard Darling believes: "There will be less opportunities for trying original and off the wall games. For example, we would be more reluctant to try *Rock Star Ate My Hamster* at £3.99".

Virgin Games marketing director, Andy Wright, concurs: "Developing original stuff is no longer possible. It is now a release market".

• *Will they still produce games like* Shinobi *when the prices go up?*

Julian Jones, a spokesman for Players, responsible for such games as *Prison Riot*, believes: "The distributors are trying to push old stuff on to the public. We have got to do what the distributors want to do. Distributors call the tune and there is no way you can break that barrier (between the software company and the public) down".

A spokeswoman for John Menzies, however, takes the opposite view: "From now all 8-bit budget software will be on sale for £3.99 unless pre-priced. Most software companies are recommending the £3.99 price."

WH Smith is more radical still. It has stated to the industry press that it will sell all 8-bit budget games at £3.99, regardless of the recommended retail price from the manufacturer. Another major outlet, Boots, has decided to stock only £3.99 games.

• 'There will be less opportunities for trying original and off the wall games,' says Richard Darling, chairman of Code Masters.

Do you have any views on the possible rise in prices? If so air your views by writing to No 8-bit Price Rises, *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW. ■

• Oceans of fun with a compilation label called Addicted to Fun. The first bundle under this title sees* Bub and Bob *returning to the shelves.

Just say no?

Ocean is to launch a new games label to deal with compilations.

Called Addicted to Fun, the first release under its aegis will comprise *Rainbow Islands*, *New Zealand Story*, and *Bubble Bobble*, all of which received critical acclaim on their original releases. The compilation will be called The Rainbow Collection and will cost £19.99 for the ST and Amiga, £9.99 for the C64, CPC, and Spectrum.

According to Ocean, more Addicted to Fun packages will follow, and they will all be themed. ■

Rhapsody II in blue

Archimedes owners with a musical bent may be pleased to know that *Rhapsody II*, the latest version of the *Rhapsody* music program, is now available.

It has several new features, including MIDI thru, and beat facilities and support for up to 64 MIDI channels, as well as upgraded editing tools. Formatted scores can be exported to *ScoreDraw* for improved print quality. *ScoreDraw* will be available later in the year. *Rhapsody II* is available now from Clares for £61.95. Owners of the first version can upgrade for £15.50. To find out more, call 0606 48511. ■

Deus ex machina

Amiga owners looking for enlightenment can now turn to Neuralink's *Context Bible*, which has recently been reduced in price.

The Bible has been reduced from $120 (£72.73) to $50 (£30.30) to bring the Good Book to more people. It comes on a total of 17 disks, but can be installed on a hard disk to avoid a lot of disk swapping.

One version of the computerised Bible combines with *Thinker*, a hypertext program, which costs $100 (£60.61). This makes *Context Bible* accessible to Bible study classes as words and verses can be found and cross-referenced with ease.

Context Bible is only available from Neurolink in Texas, USA. It can be contacted on 010-1-806-793-0423. ■

Icon do that

For Amiga users of multimedia presentation packages, such as *AmigaVision* and *CanDo*, and have problems with devising icons for their masterpieces, INOVAtronics has released the Interface Design Kit.

The package consists of four disks that contain over 500 clip art images to use in those programs. Some of the images include mathematical symbols, disks, videodiscs, music, printer and document icons.

Because there are so many images in the package, the manual is an essential component, as it explains where they all are on the disks.

The Interface Design Kit is available now from distributor Checkmate Digital. For more info, call 071-923 0658. ■

Objects to open Windows

March Systems has released Advanced Easy Windows, a development tool for the Windows graphic user interface (GUI). The new program is an extension of the Easy Windows object oriented programming tool, and includes several additional features.

The package is designed for producing Windows applications and enables applications to be designed and modified, so the company claims, without the need for learning a new programming language.

It consists of several different 'modules', including file management, a library of programming 'objects', standard query language (SQL) database, and an 'inheritance' feature which can import features from other files created by the package.

Advanced Easy Windows can run on any PC running Windows and costs £199.

Owners of Easy Windows can upgrade to the advanced version for £99. For more information, call March Systems on 0734 404079. ■

windows
windows
MARCH

• Windows users who want to program applications can now use Advanced Easy WIndows, an object oriented development tool and an extension of Easy Windows.

Animated antics

JCL has released AniMate, an upgrade for its ColourPic and SuperPic video digitisers that lets users dabble in the art of animation.

AniMate is a combined RAM expansion card, time marker unit and supporting software that enables the digitisers to produce animations that take up a quarter of the Amiga's screen. These can be arranged from images taken from sources such as a video camera or VCR (video cassette recorder).

Recordings can be made in real-time, or if the images are to be used as individual frames, in single steps. The time marker enables short sequences of images be joined together to create longer productions.

All the images are stored in AniMate's own RAM, and once seen by the user they can be converted to IFF files to be used in other packages. The RAM also means that digitised still images can be made in both overscanned and interlaced graphics modes, which offer better resolution and colours.

AniMate is available as an upgrade for Amiga users who already own a JCL digitiser at a cost of £150. Alternatively, can be bought ready-fitted to either the ColourPic or SuperPic digitisers, for £549 and £649 respectively.

JCL is on 0892 75791. ■

1,000,000,000,000

You can ring my bell...

The Co-Access voice mail system from Boston Technologies is unlike any other voice mail system in existence. It is designed to handle a large number of calls and any incoming line from any subscriber.

Other voice mail systems are limited in that they have only a certain number of call-answering processors, and if the lines are busy or a processor is tied up then the caller usually can't leave a message.

One of the features in the recently patented system is digital switching. The system is controlled by a central computer which maintains a network of smaller processing computers which can in turn both store and retrieve telephone messages.

Voice mail systems such as these are sold in the US mainly to telephone companies.

Call Boston Technologies on 0101-6172 469000. ■

Network chips in

The first single-chip Ethernet network controller, named the ST-NIC, has been released by National Semiconductor. Where three chips were needed before, the network interface controller, encoder/decoder and the terminal transceiver are on the one chip, using only a quarter of the electrical power. ■

TOMORROW'S CUTTING EDGE

Technology is forever moving ahead in leaps and bounds. How can we keep up with it all? Easy – read this page

Disk-cover the world

Now you can forget flicking through travel brochures to plan your Stateside travels. Travel author Lee Foster has combined forces with Boston Documentation Design to produce the first travel guides on a disk, for the PC.

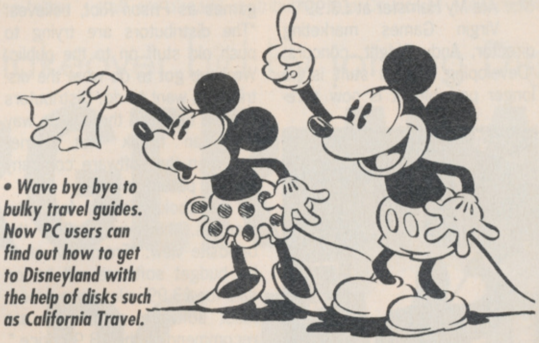
The advantages of doing this are numerous. By the time travel information gets published it is often out of date. Now, updating this information is as easy as changing data on a floppy disk, so, in theory, the latest information should always be available.

Also, computer disks are comparatively smaller than travel books to carry around and store, and if information is required on paper, it can be printed out.

Currently there are five disks available in the range. They are called, *San Francisco*, *Silicon Valley*, *California Travel* (a more general guide to the Golden State), *Western US*, *Travel Sampler US* and *Travel Sampler Worldwide*. They each retail for $39.95 (£24.21).

All the information is text-only at the moment but methods of adding photographs are being looked into. The text information is accessible through a *Hypertext*-style program which can cross-reference and display the different information.

Once pictures are added, and other places are covered, it won't be long before bins are no longer overflowing with unwanted 18-30 Holiday brochures. ■



• Wave bye bye to bulky travel guides. Now PC users can find out how to get to Disneyland with the help of disks such as California Travel.

Time for the transputer?

Many large US computer companies, including Cray, IBM and Intel are predicting that 1995 will be the year of the teraflop supercomputer. However, Parsytec, a German company, expects to produce such a machine much sooner.

The supercomputer is capable of processing at speeds of up to a teraflop (one million million instructions per second). Parsytec claims that its Grand Challenge computer, which is capable of processing just as fast, will be ready by 1993.

The machine will be based on the T-9000 transputer-based processors which can be connected in parallel to each other in large numbers. And as more of them are added, the processing power is proportionally increased.

The Grand Challenge computer is expected to have 65,000 such processors.

The claims made by the German company seem a little on the optimistic side as, at the moment, a production version of the T-9000 processor has not yet been demonstrated. And the Grand Challenge is still on the drawing board.

The machine is not being regarded as mere vapourware though: the company has already sold six smaller computers of a similar design which use only 64 processors. ■

Who's a pretty polychrome?

Computer users are using colour more and more often, but to get this colour from the monitor screen to paper has long been a problem. Until now...

Colour dot matrix and laser printers are fine for putting basic polychrome images on to hard copy, but for serious, genuinely photographic printing, there hasn't been any suitable technology around.

Now a new technology has been developed which scientists believe will offer huge improvements on the printing technologies available today, and it is predicted that it will be ready for mass production in a couple of years.

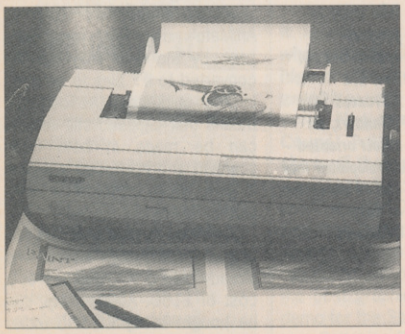
The new technology has been developed by five scientists at the Nippon Telegraph and Telephone (NTT) company in Japan.

Besides colour printers, the technology lends itself to colour photocopiers and fax machines. The photocopier is expected to sell for a quarter of the price of current colour photocopiers. The colour fax machine will be able to send a full-colour photograph about 13 times as fast and ten times as clearly as the machines now on the market.

Colour images have been considerably improved by the new method. While its resolution is currently only 200 dots per inch (dpi), which is less than a standard laser printer, the new technology (as yet unnamed) can print each dot in almost 17 million different shades and intensities.

All this information would take up a lot of memory, but the Japanese scientists have worked out a way to compress the data so as to be able to send it at roughly a page a minute across digital telephone lines.

Apart from the fact that the system is only in its infancy, there are a couple of other drawbacks to it. Firstly, it uses liquid toner unlike the powdered ink that current photocopiers use, which could make changing toner cartidges messy. And secondly, the new process can only print on to a special type of paper. At the moment it is not known whether it will eventually be able to print on normal photocopy paper. ■



• Currently colour ink jet printers such as Sharp's JX-720 are one of the best ways of getting fast, reasonable colour output, but they could soon be superceded by new Japanese-developed colour printing technology.

Power of the written word

Are the days of the cumbersome keyboard, and the mawkish mouse numbered? Apparently so as, pen-input computing is becoming increasingly accepted. This state of affairs has yet again been affirmed by the fact that another company has announced its intention to support a pen-based operating system.

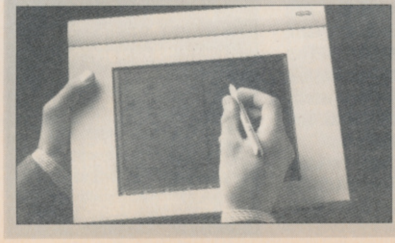
Software Publishing is planning to develop applications for Go Computer's Penpoint operating system (O/S) (see *Express* 139 for more information). Penpoint enables data to be input by writing with an electronic 'pen' on a touch sensitive monitor screen. It is designed to interpret the user's handwriting, in order to turn common scrawl into control codes that the computer understands.

The company has adopted the O/S because it feels that Penpoint uses memory more efficiently than conventional desktop systems.

***Professional Writer Plus*, the company's pen-compatible document processor runs without modification under the new Pen-Windows extension to Microsoft's Windows graphic user interface (GUI).**

Software Publishing is looking into making enhancements to its other products to run under Pen-Windows as well as Go's Penpoint.

As more and more software companies adopt pen-input operating systems it shouldn't be long before the hardware manufacturers do the same. ■



• Back to the future – will we be handwriting our input into machines like the NCR 3125 instead of typing it in?

CITIZEN PRINTERS

Silica presents some great offers on the award winning range of high quality dot matrix printers from Citizen. Each Citizen printer is built in the UK to exacting standards, ensuring superb reliability and a very high quality of output. Our confidence in the quality of Citizen printers is such that we are pleased to offer a unique two year guarantee with every printer. Plus, if you purchase your Citizen printer from us, we will give you a Silica Printer Starter Kit (worth £29.95), *FREE OF CHARGE!*

FREE DELIVERY
Next Day - Anywhere in the UK mainland

FREE STARTER KIT
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FREE COLOUR KIT
Worth £39.95 - With Swift 9 and Swift 24 printers.

2 YEAR WARRANTY
Silica offer a 2 year warranty (including the printer head) with every Citizen printer purchased from Silica.

WINDOWS 3.0
Free Windows 3.0 driver - In the Silica Starter Kit.

FREE HELPLINE
Technical support helpline open during office hours.

MADE IN THE UK
Citizen printers are manufactured to high standards.

144 CPS DRAFT 9 PIN

CITIZEN 120D+

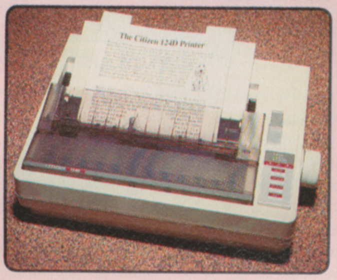
The Citizen 120D+ is one of the UK's best selling printers. It has a stylish appearance and excellent features and performance for such an inexpensive printer. The 120D+ is available with either a serial or parallel interface and is an ideal first printer.

- *9-pin Printhead*
- *Print Speed 144cps Draft*
- *30cps NLQ*
- *Epson & IBM Graphics Emulation*
- *Pull Tractor & Bottom Feed*
- *Superior Graphics - 240×216dpi*
- *FREE Starter Kit*

RRP	£233.83
STARTER KIT	£29.95
TOTAL RRP:	£263.78
SAVING:	£112.20
SILICA PRICE:	£151.58

£129 +VAT = £151.58

144 CPS DRAFT 24 PIN



CITIZEN 124D

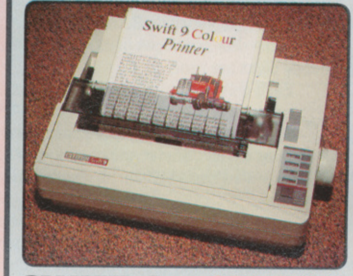
The award winning Citizen 124D brings high quality 24-pin dot matrix printing within every computer users reach. It is the ideal choice where high quality printing is required at a budget price.

- *24-pin Impact Printer*
- *Print Speed 144cps Draft*
- *2 LQ Fonts (48cps)*
- *8K Buffer*
- *Epson, IBM & NEC P6+ Emulation*
- *Advanced Paper Parking*
- *Superior Graphics - 360×360dpi*
- *FREE Starter Kit*

RRP	£292.58
STARTER KIT	£29.95
TOTAL RRP:	£322.53
SAVING:	£112.20
SILICA PRICE:	£210.33

£179 +VAT = £210.33

192 CPS DRAFT 9 PIN



SWIFT 9 - *COLOUR!*

The Citizen Swift 9 is perfect for those who require high quality dot matrix black or colour printing at a budget price. The print quality of Swift 9 rivals that of other manufacturer's 24-pin models.

- *9-pin Impact Printer*
- *Print Speed 192cps Draft*
- *3 NLQ Fonts (48cps)*
- *8K Buffer*
- *Epson & IBM Graphics Emulation*
- *Advanced Paper Parking*
- *FREE Starter Kit*
- *FREE Colour Kit*

FREE! COLOUR KIT

RRP	£280.83
STARTER KIT	£29.95
COLOUR KIT	£44.65
TOTAL RRP:	£355.43
SAVING:	£133.35
SILICA PRICE:	£222.08

£189 +VAT = £222.08

192 CPS DRAFT 24 PIN

SWIFT 24 - *COLOUR!*

The Citizen Swift 24 is one of Europe's best selling printers and has won awards including Printer Of The Year 1990. Its rapid print speed, quality and black or colour options, make it a natural choice.

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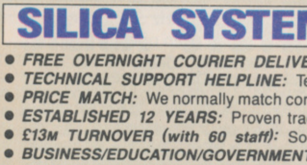
- *4 NLQ Fonts (64cps)*
- *8K Buffer*
- *Epson, IBM & NEC P6+ Emulation*
- *Advanced Paper Parking*
- *FREE Starter Kit*
- *FREE Colour Kit*

FREE! COLOUR KIT

RRP	£428.88
STARTER KIT	£29.95
COLOUR KIT	£44.65
TOTAL RRP:	£503.48
SAVING:	£199.15
SILICA PRICE:	£304.33

£259 +VAT=£304.33

PRINTER ACCESSORIES



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PRA 1215	**124D/Swift 9/24**	**£88.70**
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PRA 1189	**120D+**	**£56.45**
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PRA 1709	**Swift 24**	**£26.38**
	PRINTER STAND	
PRA 1242	**124D/Swift 9/24**	**£24.03**
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RIB 3520	**120D/Swift 9 Black**	**£4.11**
RIB 3924	**124D/Swift 24 Black**	**£4.70**
RIB 3936	**Swift 9/24 Colour**	**£15.63**
	COLOUR KITS	
PRA 1236	**Swift 9/24**	**£39.65**

All prices include VAT and Free delivery.

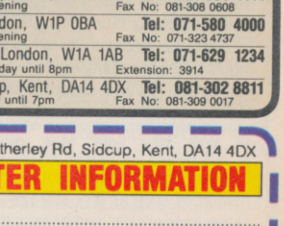
FREE! STARTER KIT

Every Citizen printer from Silica, comes complete with the Silica Printer Starter Kit, including everything you need to get up and running with your new printer immediately, FREE OF CHARGE!

- ***3½" Dual Format Disk with Amiga & ST Printer Drivers***
- ***3½" Disk with Drivers for Microsoft Windows 3***
- ***2 Metre Parallel Printer Cable***
- ***200 Sheets of High Quality Continuous Paper***
- ***200 Continuous Address Labels on Tractor Feed***
- ***5 Continuous Envelopes on Tractor Feed***

If you already own a printer, and would like a Silica Printer Starter Kit, you may order one (ref: KIT 5000) for the special Silica price of £24.95 - £5 off RRP!

NORMAL RRP
£29.95



SILICA SYSTEMS OFFERS YOU

- ***FREE OVERNIGHT COURIER DELIVERY:*** On all hardware orders shipped in the UK.
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- ***£13M TURNOVER (with 60 staff):*** Solid and reliable with maintained growth.
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- ***FREE CATALOGUES:*** Will be mailed to you with offers and software/peripheral details.
- ***PAYMENT:*** By cash, cheque and all major credit cards.

Before you decide when to buy your new printer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after you have made your purchase, when you may require additional peripherals or software, or some technical help and advice. And, will the company you buy from contact you with details of new products? At Silica Systems, we ensure that you will have nothing to worry about. Silica Systems is one of the UKs leading independent computer dealers and provides a quality service to users at home, in education and in business throughout the nation. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now, for our latest Free literature on the Citizen printer range and begin to experience the ''Silica Systems Service''.

SILICA SYSTEMS

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Order Lines Open: Mon-Sat 9.00am-6.00pm No Late Night Opening Fax No: 081-308 0608

LONDON SHOP: 52 Tottenham Court Road, London, W1P 0BA **Tel: 071-580 4000**
Opening Hours: Mon-Sat 9.30am-6.00pm No Late Night Opening Fax No: 071-323 4737

LONDON SHOP: Selfridges (1st Floor), Oxford Street, London, W1A 1AB **Tel: 071-629 1234**
Opening Hours: Mon-Sat 9.30am-6.00pm Late Night: Thursday until 8pm Extension: 3914

SIDCUP SHOP: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX **Tel: 081-302 8811**
Opening Hours: Mon-Sat 9.00am-5.30pm Late Night: Friday until 7pm Fax No: 081-309 0017

To: Silica Systems, Dept NCE 0891 - 55, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND CITIZEN PRINTER INFORMATION

Mr/Mrs/Ms: .... Initials: .... Surname: ....

Address: ....

....

.... Postcode: ....

Tel (Home): .... Tel (Work): ....

Company Name (if applicable): ....

Which computer(s), if any, do you own? ....

E&OE - Advertised prices and specifications may change - Please return the coupon for the latest information.

WHAT'S NEW

From disk drives to plotters they're all here in fact filled details

Dinky dual drive

PRODUCT: Combined 3.5/5.25 inch floppy drive
NAME: All Media Floppy
COMPATIBILITY: PC

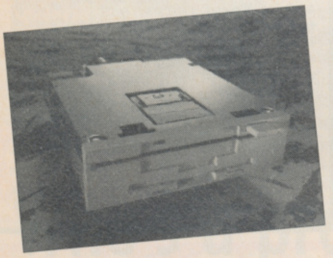
Fitting into the space of a normal half-height drive, Data Peripherals' All Media Floppy can take both 3.5 and 5.25-inch disk drives.

It is compatible with the existing disk formats such as the 720K and 1.44Mb 3.5-inch, and 360K and 1.2Mb 5.25-inch disks. The drive comes with a standard floppy drive interface for the PC with a single data connector.

Instead of using the disk eject lever which is common to 5.25-inch drives, the All Media Floppy uses a push button for ejecting disks – as seen in all good 3.5-inch versions.

At present the drive is only available in bulk quantities to dealers and manufacturers. However, once it filters down through the distribution channels it should become commonly available so all PC users will be able to get hold of them.

Price: £139.70 for 1; £104 each per 100; £87 each per 1,000 (dealer prices only)
Availability: Only through dealers
Target users: Computer manufacturers and individual PC users
Contact: Data Peripherals: 0785 57050
Perceived competition: The company believes there is no competition: the product is unique.



• Floppy drives can still surprise. Take this little baby which manages to save space and still look good. What could it do for you?

Share your server

PRODUCT: File server software
NAME: DataClub 2.0
COMPATIBILITY: Macintosh

Gomark has released version 2.0 of International Business Software's *DataClub* file server software for the Mac. The company claims it will improve performance by more than 500 per cent.

DataClub 2.0 runs System 6 and the Mac's latest operating system (O/S) 7. On System 7 it also supports the new O/S's features such as Balloon Help and the TrueType font standard.

The product's 'Virtual Server' feature lets machines on a network share resources such as disk storage and server processing, and access them through a single icon on each machine. Not only can files be accessed in this way but it also makes backing up data easier.

DataClub's 'locked' feature has also been improved to prevent certain folders from being opened by other Macintoshes on the network.

Price: £199 for three user version; £549 for ten user version
Availability: August 1991
Target users: Small businesses and sites that have from three users upwards.
Contact: Gomark: 071-731 7930
Perceived competition: Personal File Share, TOPS

Moveable media mechanism

PRODUCT: Bernoulli removable disk storage
NAME: Bernoulli 90 drive
COMPATIBILITY: PC, Mac

Iomega claims that its Bernoulli 90 is the first 90Mb removable disk storage system for the PC and Macintosh. The drive is based on the company's Bernoulli mechanism which uses removable disk cartridges in much the same way that normal floppy disks are used.

Each disk can store up to 90Mb of data, and the drive is also compatible with the older Bernoulli 44Mb disks.

The Bernoulli 90's average access time is 27 milliseconds and it has a data transfer rate of up to 20Megabits per second. The drive also has a 32K cache memory to further speed up data transfer.

Handily for the less lucky (or more clumsy user) the hard disk has built-in protection against damage to the magnetic media which actually stores the data. If the Bernoulli 90 is dropped or has something dropped on it, the magnetic media inside falls away from the head. Theoretically at least, this saves the disk from any radical, physical damage.

• Iomega's Bernoulli removeable 90 drive lets you fit 90Mb on a single disk, and also protects itself from shocking events such as being dropped on the floor.

Price: Transportable 90:£988.42
Dual version: £1934.83.
Removable disk: £197.26
Availability: Now
Target users: "No one specific – up to dealers"
Contact: Iomega Corporation: 081-686 7171
Perceived competition: Other hard disk and removable disk manufacturers such as Syquest, Ricoh.

Database discounts

PRODUCT: Database package
NAME: Delta Five Release 2.0
COMPATIBILITY: PC

Action Computer Supplies has put together a package that comprises Compsoft's *Delta Five Release 2.0* database and *Delta Five Graph*, a presentation package, all for £426.

Normally, the database on its own costs £595, while the presentation package is £295.

Delta Five is a menu-driven database for the PC. It features 'form fill' techniques, supports networking and relational and transitional file structures. The presentation package, *Delta Five Graph*, can then display the databases created with *Delta Five* in a number of ways, such as pie charts and bar graphs.

Price: £426
Availability: Now (special offer until 30 September)
Target users: 'Any potential PC database users'
Contact: Action: 0800 333333
Perceived competition: Other databases such as *Dbase* and *Paradox*, which the company also stocks.

Fun solutions get productive results

Computing isn't all fun. In fact, sometimes things can go drastically wrong.

To make these life-altering events a bit easier to manage, Accodata has produced *Solutions to Office Problems*, a brochure that uses cartoon illustrations to outline what can go wrong and what to do about it. These include such things as possible dangers from prolonged exposure to glare from VDU screens, the effects printer noise and how to cope with a limited work space.

This is not merely an act of charity however, as Accodata shows how its products can help solve the problems. The brochure also explains new EC directives on minimum health and safety standards for furniture and equipment in the workplace, and how to comply with them.

• Compusys' 340C is the company's first machine to use AMD's 40MHz processor, which might come as a shock to to its previous supplier, the mighty Intel.

Clone offering

PRODUCT: Desktop PC
NAME: Compusys 340C
COMPATIBILITY: PC

Compusys has released its first machine based on AMD's 40MHz 386 clone processor. Apart from offering the 40MHz processing speed, the machine comes with 4Mb of RAM, 128K of cache memory, an 80Mb hard disk drive and Super VGA colour graphics.

It comes in desktop or tower case configurations and has six expansion slots available. Two floppy drives are also included, a 3.5-inch and a 5.25-inch.

Price: £2,099
Availability: Now
Target users: Corporate users, UNIX applications, file serving, CAD/CAM
Contact: Compusys: 0296 395531
Perceived competition: Any company offering a 40MHz machine and 486s. ■

192 CPS DRAFT **9** PIN

SEIKOSHA SP-1900

- *Best Cost Performance*
- *80 Column Print Width*
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- *48cps NLQ @12cpi (Elite)*
- *1K Printer Buffer*
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- *Pull Tractor & Bottom Feed*
- *Graphics Resolution - 144×72dpi*
- *Parallel Centronics Interface*
- *Paper Parking As Standard*
- *FREE Starter Kit*

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RRP £210.33
STARTER KIT £29.95
TOTAL RRP: £240.28
SAVING: £93.40
SILICA PRICE: £146.88

£125
+VAT = £146.88

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When you buy a Seikosha printer from Silica, we will give you a Silica Printer Starter Kit (worth £29.95) FREE OF CHARGE to make sure you get off to a flying start with your new printer. For further information on the Seikosha range, complete and return the coupon below. Or, if you can't wait to get your hands on a new low priced Seikosha printer, telephone our sales hotline, 081-309 1111 now to place your order.

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- ***FREE STARTER KIT*** Worth £29.95 with every Seikosha printer.
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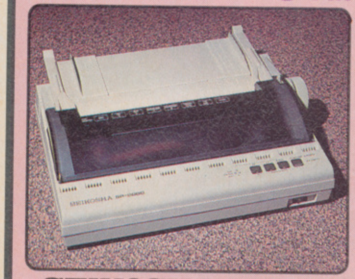
192 CPS DRAFT **9** PIN



SEIKOSHA SP-2000

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- *Large 21K Buffer*
- *Pull Tractor & Bottom Feed*
- *Graphics Resolution - 144×72dpi*
- *Paper Parking As Standard*
- *FREE Starter Kit*

REF: PRI 8200

RRP £233.83
STARTER KIT .. £29.95
TOTAL RRP: £263.78
SAVING: £100.45
SILICA PRICE: £163.33

£139
+VAT = £163.33

240 CPS DRAFT **9** PIN

SEIKOSHA SP-2415

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- *50cps NLQ @12cpi (Elite)*
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- *Graphics Resolution - 240×144dpi*
- *Paper Parking As Standard*
- *FREE Starter Kit*

REF: PRI 8215

RRP £376.00
STARTER KIT .. £29.95
TOTAL RRP: £405.95
SAVING: £125.12
SILICA PRICE: £280.83

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+VAT = £280.83

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NORMAL RRP
£29.95

200 PRINTER PACK

240 CPS DRAFT **24** PIN

SEIKOSHA SL-92

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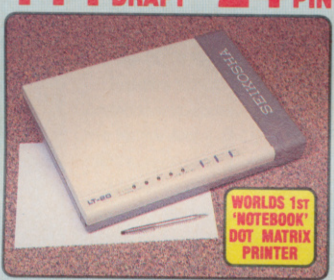
- *80cps NLQ @12cpi (Elite)*
- *Large 44K Buffer*
- *Pull Tractor & Bottom Feed*
- *Graphics Resolution - 360×360dpi*
- *Paper Parking As Standard*
- *FREE Starter Kit*

REF: PRI 8292

RRP £393.63
STARTER KIT .. £29.95
TOTAL RRP: £423.58
SAVING: £189.75
SILICA PRICE: £233.83

£199
+VAT = £233.83

144 CPS DRAFT **24** PIN



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- *Worlds First DM 'Notebook' Printer*
- *80 Column Print Width*
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- *Graphics Resolution - 380×180dpi*
- *Parallel Centronics Interface*
- *FREE Starter Kit*

REF: PRI 8820

RRP £433.58
STARTER KIT £29.95
TOTAL RRP: £463.53
SAVING: £112.12
SILICA PRICE: £351.33

£299
+VAT = £351.33

324 CPS DRAFT **24** PIN

SEIKOSHA SL-210

- *80 Column Print Width*
- *324cps Draft @12cpi (Elite)*
- *108cps NLQ @12cpi (Elite)*
- *5K Printer Buffer*
- *2 Bin Cut Sheet Feeder*
- *Graphics Resolution - 360×360dpi*
- *Plug-in Function Cards*
- *FREE Starter Kit*

REF: PRI 8321

RRP £703.83
STARTER KIT ... £29.95
TOTAL RRP: £733.78
SAVING: £264.95
SILICA PRICE: £468.83

£399
+VAT = £468.83

277 CPS DRAFT **24** PIN

SEIKOSHA SL-230

- *136 Column Print Width*
- *277cps Draft @12cpi (Elite)*
- *92cps NLQ @12cpi (Elite)*
- *9 Fonts As Standard*
- *2 Bin Cut Sheet Feeder*
- *Graphics Resolution - 360×360dpi*
- *Plug-in Function Cards*
- *FREE Starter Kit*

REF: PRI 8423

RRP £821.33
STARTER KIT .. £29.95
TOTAL RRP: £851.28
SAVING: £264.95
SILICA PRICE: £586.33

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+VAT = £586.33

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Address: ....

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.... Postcode: ....

Tel (Home): .... Tel (Work): ....

Company Name (if applicable): ....

Which computer(s), if any, do you own? ....

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EXPRESS MAIL

Welcome to letters pages that get you thinking

This week, Haydn Fitz-Williams prints your points on the CDTV challenge to CD-I, takes your tips on a new program for the ST and a Cyber/virtual reality magazine venture and listens to advice on console costs. Plus your chance to put a question to top industry figures!

Format fight

In response to your response to Adam Wright's letter in *Express* 138 not only is the David v Goliath debate a parallel, but also the forthcoming CDI v CDTV 'war' could well be paralleled by the Betamax verses VHS battle. Everyone agreed that Betamax was better, but who won?

Even though CDTV is limited by the Amiga structure there are signs that CD-I may be about £750 compared to the CDTV's expected price tag of around £450, which means that many people will go for the cheaper machine. The other big point in its favour is that CDTV will very probably appear in rental shops very soon (as did VHS!).

I was amazed to read that Sam Tramiel thinks Atari can (and I quote) 'blow the Amiga away', one is very much under the impression that Atari would have difficulty blowing a piece of paper away! I would be very much interested in seeing Sam Tramiel substantiate those claims.

For those of you out there who don't have the luck to read *Amiga Format*, I will inform you that it ran a survey. When the readers were asked 'Would you like to upgrade your Amiga system to run CDTV software?', over 100,000 people said "yes", which could well mean over 100,000 potential CDTV buyers.

Readers should also note that Commodore is working on a CDTV drive for the Amiga (a CD can hold 550Mb compared to a 880K disk).

My point is – no offence, but what sort of a name is Hadyn Fitz-Williams? It sounds like a name a Lord would have and the chance of an *Express* Mail man being a lord in disguise is 0 per cent.

P Young, Derbyshire

WHAT A PITY that such a balanced informative letter is spoiled by the thinly disguised slur on a fine name and lineage. The name is Welsh-Irish, the man is proto-Germanic and had you perused the appropriate journals you would see that the Fitz-Williams line does in fact have its roots firmly dug into the sharp end of over 40 generations of innovators, inventors and champions of the advancement of science.

Who was quietly constructive in quelling the Luddite rebelions? It surely wasn't some sire from Derbyshire of the name Young, it was an F-W

Cyberman

Many months ago, I noticed in your fine magazine the name and address of a company producing a magazine called *The Cyber Times*. Sounds right up my street I thought, so I sent them the £15 one year subscription fee and within a couple of weeks received the first issue.

Since that time I have heard nothing despite writing five letters (the last one demanding my money back immediately). What has happened to them? Maybe you or one of your readers know.

Since that time I have decided to get involved in starting my own Cyber/Virtual Reality magazine. As far as I know there is no other such publication in existence in the UK at the moment (I stand to be corrected). So, for readers out there who'd like to know more, drop me a line and I'll send some more details. And we'll not be running off with your money after one issue!

OK, that's it for now. Thanks for making Thursday mornings so enjoyable! Over and out!

Ian Faichnie, Brighton

WE DON'T KNOW where the *Cyber Times* crew is, but we're looking into it. Before we cast our million plus annual readers to the same fate that you've suffered in the hands of *Cyber Times*, we want to see examples of what you have on offer. If it makes the grade, we'll pass on your address to our readers. If it's low rent drivel, we won't.

ST star program

I recently received my copy of *The Chameleon* a program written by a young German and in my opinion this is the best and most vital yet written for the ST.

What it does is to load itself as a desk accessory (DA) and you can then call up any DA at any time through the file selector. So in effect you could have a separate disk with 100 DA's and call any when needed and it only takes up 5K of memory.

Imagine what this means to the person who has an ST with the basic memory, no more worry over the six DA limit and how much memory is eaten up when they are resident. This is definitely the only desk accessory you'll ever, ever need.

This lad could have made a lot of money with this gem, but it can be yours for free by sending a blank disk and two International reply coupons (necessary for overseas), this is important. You must let the regular readers know about this immediately.

S Carnegie, Glasgow

BETTER THAN THAT, our irregular readers who have chanced on this issue will be able to join the regulars in applauding this fine protegé.

However, rather than give out someone's address to our readers, we've passed on the details to a couple of PD libraries so that they can get it in and thoroughly test it for bugs and full range compatibility before letting it loose on an unsuspecting public.

Cover story catches someone's eye

The cover story of *Express* 141 on the severe price cut on the C64GS and the Amstrad GX4000. caught my eye. So I popped along to the nearest branch of Dixons hoping to pick up a GX4000, figuring that £20 was a reasonable price, even if all I ever did was play *Burnin' Rubber* on it.

Alas, no joy at Dixons. A small, but vital fact the article failed to mention was that about two months ago, Dixons slashed the prices of the two consoles to £29.95 and at that price had sold out of both consoles and cartridges weeks ago!

None of the Dixons' branches in Edinburgh had any in stock, nor could they order me one. One of the shop manager's phoned the head office to check whether any of the other stores nearby had any, and discovered that the only store in Scotland with any GX4000's in stock was in Aberdeen,150 miles away!

For an item of such miniscule value and non-existent profit margin, Dixons weren't prepared to send one down to the Edinburgh store. Going to Aberdeen to pick one up would cost half as much again as the console!

So thanks for the interesting item – but next time – please try and give us the full story. In the meantime, if anyone knows where I can actually obtain a GX4000, they could might like to contact me via your pages.

Derek Richardson, Edinburgh

SO NEXT TIME we run a story based on truth, we must ring every store in the country to find out which branch a good deal is available at? This is the real world. It was a real story. Dixons did slash the GX4000 and it did rate as the bargain of the decade (if you aspired to the Amstrad console)

Would you expect us to run several editions of the magazine with an update of how many GX4000s Dixons had sold? What happens if we ring up Dixons and they say: "Yes, it's available in Kirkaldy'" and we print that?

In the ensuing few days twixt check and print, the citizens of Kirkaldy may realise what bargain is close to hand and buy them up. when you come marching over the Forth Bridge with £20 in your hot and sweaty mit, will you expect us to refund your bus fare? Well we won't...

ON THE COUCH

This week *Express*' highly paid and even more highly... intelligent trick-cyclist, Dr Clare Anthony examines. Maurice Fuller of Birmingham.

Mo' wrote in and told Clare about the machine he owns, the software he loves and the computer he would most like to have, and here we quote: '... under my most complete control...'.

With these minimal pieces of psychic data, the good doctor was able to plumb the very depths of Mo's neurosis and come up with the mental monitor on Maurice's manic mind malady.

If you would like to have your inner recesses cleared and your angst annilhilated, just send the details of your machine, your fave software, and the machine you desire to: Leather Couch Clare, *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW.

Remember, it's better to be Jung free and single!

So here we go Mo'. Close your eyes, relax your muscles, lean back and think of Sigmund (Freud that is).

- **MACHINE OWNED:**
  Acorn Archimedes
- **FAVOURITE SOFTWARE:**
  Interdictor
- **DESIRED MACHINE:**
  Tandy WP2

Well Mo' this is a case of Cathexis which as you know, refers to the accumulation of mental energy relating to an idea, memory or object. You obviously recall the reason you bought the Arc in the first place. It is a lovely and intelligent machine, ideal for thoughtful and erudite work. Some would say it looks like Julia Roberts with the IQ of Dr Jonathan Miller.

However you succumbed to peer-group pressure by getting a game, repressed your need to produce professional work, and sublimated this in the form of the obviously orgasm related flight--sim of fantasy. Your underlying need for a simple, but effective machine to simplify your life reflects this state of affairs beautifully.

PROGNOSIS: Learn to fly with the sim, join the USAF and zip round the world blowing things up. It won't get you the Tandy, but you might score more often.

Mine's Better than Yours!

I was happily playing *3D Monster Maze* on my ZX81 when a friend of mine rang. He started to telll me how amazing his Amiga was and there was nothing it could not do.

I argued that my ZX81 was far superior and challenged him to a contest. He said that if I can beat him on one thing he would give it to me. I arrived at his house with my trustee ZX81 and looked him straight in the eyes.

"Take your best shot", he said.

"Follow me", I said.

We took our respective computers into the back garden "Watch this!", I said. I held my ZX81 Like a discus and hurled it into the sky. It span like a boomerang, cleared the fence and landed in the alotment behind his house. My friends mouth dropped and his eyes inflated. He held his Amiga under his arm and started to turn. He got dizzy and fell over, landing on his Amiga, crushing it.

"OK, you win", I said.

I retrieved my ZX81 from a compost heap and plugged it in. After 15 minutes I was playing *3D Monster Maze* again. My friend, however, plugged his in and smoke came from the back. He offered me his Amiga, but I declined and said that mine is much more reliable.

Matthew Hamnett, Leicester

• Flying high, feeling free, but which could be thrown the furthest – the trusty Amiga or the sturdy Spectrum? Any bets?

WE'VE DECIDED to set you and your trusty ZX81 a tougher challenge than battling a mere Amiga. We've talked to the guys down at GRiD, the company that makes the ruggedised military laptops and asked for the loan of one of their industrial strength models.

After seeing a video of it being run over by a speeding 38 tonne Volvo artic, and still work, we'd like to set the GRiD challenge. We'll bring a GRiD, an assortment of lorries and coaches and a video camera and you can bring your ZX81.

The only condition is that the person whose computer doesn't work afterwards must pay the cost of setting it up.

We used an old ZX81 to test it and, although it didn't work, we had got the first ever 32-bit ZX81 (33-bit if you include the RAM pack).

Neighbours...

I was gobsmacked watching *Neighbours* on 19 July 1991 when one of the Alessi twins bought a new mailing program. After she installed it, the screen showed such gems as *IFF Convertor*, *Ultimate ST Ripper*, *Virusx* etc.. It looked strangely like a PD Disk. She kept saying "Oh, I cannot find the files", probably no wonder when the disk is full of *ST Rippers*!

The next time you saw the screen, *Searcher VI4* by RIP(a graphic searcher) was on it. She then said "I can't get anything to work", as she pressed keys and the display was shrank and then expanded. "Better call in an expert", exclaimed Paul.

The expert arrived, and the Amiga was still showing the *Searcher* program. "Sorry", he said "Looks as though your files have been wiped by a virus, but seeing as you have not introduced any new programs, I don't know how it got there". Paul said "When can you fix it?", "Well", the expert said, "Next Monday". Probably if he took a closer look at the disk, he would have found they had inserted a PD Disk! If you press F10 it exits out of the *Searcher* program. Some expert.

Well, I suppose it follows, if you are going to have the worst acting on a soap, you may as well have bad experts as well, eh?

What will happen next week, will Paul accidentally stick in a disk containing *Xenon II* and realise that his Amiga has been invaded by Aliens?

Julian Smith, Sheffield

AS YOU probably know, we get our *Neighbours* episodes a little later than the antipodeans down under.

To check out your theories we had *Express* New Zealand Staffer Tim Howell stay up late to ring his mates in Melbourne to find out what's in store. He was pledged to secrecy in order to avoid spoiling it for everyone, but he keeps mumbling something about the revenge of the Mutant Grundies and a Henry Ramsay lawnmower simulator. We shudder to think...■

Ask a question and win a fiver!

Yep, this is your chance to put your queries to some of the world's leading computer companies. Over the summer, *Express* will be conducting a series of interviews with some of the biggest names in the biz. And we want your contributions!
Here's the list of the top manufacturers and developers we'll be talking to:

● Acorn ● Amstrad ● Apple ● Atari ● Commodore ● IBM
● Intel ● Microsoft ● Motorola ● NEC ● NeXT ● Nintendo
● Panasonic ● Philips ● Sega ● Sharp ● Sony ● Tandy

The theme of the series is 'Towards 2000', so we'll be asking the UK bosses of these firms to tell us where they've been, where they're at and where they're going. And along the way there's bound to be an opportunity to ask a lot of niggling little questions you've always wanted answered but never found in print.

So now's your chance to find peace of mind and if we like your question you could win some dosh into the bargain! All you have to do is drop a line to 'Industry Interviews', *New Computer Express*, 30 Monmouth St, Bath BA1 2BW and we'll do the rest. But hurry, we want to get this off the ground as soons as poss!

Write Now

Write and tell Haydn Fitz-Williams what you think! Reach him at: *Express Mail, 30 Monmouth Street, Bath BA1 2BW.* Sorry, no personal replies, even with an SAE and remember, only SOME letters win a fiver!

☎ On-line mail

Own a modem? Then squirt us a letter. *Express* has its own area on Aspects bulletin board (061 792 0260) where you can leave mail and upload/download files.

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AMIGA

- Silica takes on fastest Amiga accelerator card yet
- 256 colour VGA PC emulation comes to the Amiga
- Workbench 3.0 – read the details here!

SILICA SIZZLERS

If you thought Silica Systems does nothing more than shift Amigas, then think again. It is rapidly becoming one of the UK's most important retailers of Amiga products, ranging from mouse mats to high powered processor cards and graphics boards.

Its latest aquisition is the entire range of products from US-based Great Vally Products (GVP to its friends). At the time of going to press, a few strings had still to be tied up, but Silica is confident that it will be able to offer UK Amiga users the entire range of GVP products by the time you read this.

Previously distributed in this country by Power Computing, GVP produces a vast range of high power expansion products ranging from hard disk controllers, to tape streamers and processor accelerators, including the Amiga's fastest accelerator yet, the GVP A3001 (all 50MHz of it!).

I was recently lucky enough to be able to have a play with a full spec A3001 (68030, 68882, 4Mb of 32-bit RAM) which I very quickly installed inside my Amiga 2000. What a difference it made! With 50 MHz of processing power, my Amiga positively burned through applications. Comparing a standard Amiga to an Amiga equipped with an A3001 is like comparing a Sierra Cosworth to a Fiesta 1.1!

Ray tracing programs showed the most significant speed increase, but most other programs also benefitted. In particular, ASDG's *Art Department Professional* was enhanced beyond belief. According to Silica, GVP has become the world's second largest manufacturer of add-on cards for the Amiga, second only to Commodore itself. It's not surprising either – every GVP product I have encountered has been streets ahead of the competition. They may be expensive, but buying GVP means that you get the best. Silica can be contacted on 081 309 1111.

ATONCE UPGRADE SOON

Staying at Silica, plans are afoot to relaunch its critically acclaimed ATonce PC emulator for the Amiga. Although ATonce was technically a very nice little product (I like it), it never really achieved the kind of mass market penetration that Silica would have liked.

The company has now taken on many of the criticisms levelled at the original and it hopes to fix the vast majority of these within the new release. Precise details are still at little hard to extract from the Sidcup-based company, but you can rest assured that I'll let you know as soon as I hear more.

Silica itself was keeping rather tight lipped, but a source close to the company revealed to me that one feature that is being looked at is full 256-colour VGA support. I'm not quite sure how it intends to achieve this using the Amiga's current video hardware, but my source claims that some extra hardware will be built into the board itself which will work in combination with the new enhanced chipset.

What this basically means is that unless you're lucky enough to have an ECS-equipped Amiga (which rules out everyone but A3000 owners and developers!), you won't be able to use this new mode. It is also believed that the new ATonce may not neccessarily fit internally inside the Amiga 500.

German developer Vortex is looking into the possibility of producing a version of ATonce that plugs into the expansion bus on the Amiga 500. Obviously it will come with a pass-thru connector, therefore enabling those of you lucky enough to own a hard drive to use both products simultaneously.

Although multi-tasking was rather shakey on the final version of ATonce, it will be retained on the upgrade.. Phone Silica on 081-309 1111.

SNIPPETS

● Rumours are rife at the moment concerning a new release of the Amiga operating system. No, we're not talking Workbench 2.0 here – that's old hat now. We are in fact talking Workbench 3.0. Yes folks, the vast majority of us still don't have it (officially), but Commodore is supposedly already working on the next major release. As always, getting information on the new version is like extracting blood from a stone, so we can only speculate on what the new Workbench will offer.

Built-in support for Compugraphic fonts isdefinitely on the cards, as is support for both virtual RAM (use your hard disk as a RAM disk!) and possibly even 24-bit video hardware (new custom chips perhaps?) I'll keep you posted if I hear more.

● No sooner has Europress' AMOS 3D hits the streets, but the company is already hard at work on an upgrade. According to Voodoo Software, the developers of AMOS 3D, work has already started on the upgrade which will push the 3D system further still. Details are rather sketchy, but Voodoo claims that the upgrade will speed things up considerably and will allow for far more complex objects to be created.

● Silica certainly doesn't mess about when it comes to new and upgraded products. Look out very soon for *Scala 2*, an upgraded *ASDGScanLab* and (best of all) *Art Department Professional 2*. The latter boasts many new features, including full support for the new Epson A4 colour scanner plus many new image

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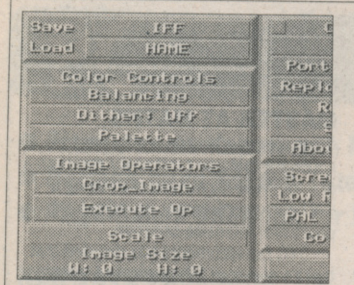

• Look out for a major upgrade to ASDG's* Art Department Professional *at a software stockist near you real soon.

processing tools.

- Sampling freaks may be interested to learn that Microdeal is soon to release major upgrades to its two samplers, *AMAS* and *MasterSound*. Microdeal doesn't want to give too much away at the moment, but it assured me that the new samplers (which will be launched at the next Computer Entertainment Show) will be pretty damned stonking. Could we be talking 16-bit? We can only wait and see.

HAM-E SUPPORT GROWS

Support for Black Belt's revolutionary 24-bit graphics extender HAM-E is growing at a tremendous rate. Already Black Belt claims that such big name developers as ASDG, NewTek, Progressive Peripherals, Oxxi and Virtual Reality laboratories have jumped on the HAM-E band wagon, with products that have been written to fully support HAM-E's amazing 16 million colours coming thick and fast.

ASDG was the first company to jump on the HAM-E bandwagon in the form of a loader module for its *Art Department Professional*. Recently, ASDG has released a saver module as well, which basically means that the *Art Department* can be used almost exclusively to prepare 24-bit images for display under HAM-E.

The saver only supports 256-colour 'REG' mode images, but plans are afoot to upgrade the saver to support HAM-E's 24-bit mode as well. As a fan of the *Art Department*, I for one will be the first in the queue for this one!

Virtual Reality Laboratories is currently putting the finishing touches to a HAM-E version of its popular *Vista* fractal scenery generator. The program will be able to render HAM-E compatible images directly.

Most exciting of all is the news that at last a decent HAM-E compatible paint package is to be released. That program is none other than *SpectraColour*, a program which is already doing the rounds in its current HAM mode guise. Oxxi has been working closely with Black Beltto produce a HAM-E compatible version of SpectraColour which should allow users to paint with a full 16 million colours at their disposal.

HAM-E is distributed in this country by Checkmate Digital Ltd. Checkmate is on 071-923 0658. You can find out more about ASDG and Oxxi products by talking to HB Marketing on 0753 686000.

Jason Holborn

ST

- **Mega ST powers up to compete with Apple**
- ***Saxon Publisher* – the ST challenge for DTP**
- **Speed up your CPU by 3,000 per cent**

ATARI WANT APPLE

While chatting to Bob Gleadow last week, he revealed that Atari's new machines represent a serious assault on the document processing market. The Mega STE is being lined up as an engine for those who want the power of an Apple without the price tag.

There are rumours that Atari will be lowering the price of the TT at the same time as they launch the Mega STE, thus giving prospective customers two main choices: the fast 32-bit TT or the 8/16 MHz Mega STE.

With hindsight, this seems like an obvious move to have made. Both Mega STE and TT have very versatile networking facilities built into them, leaving a window of opportunity for a third party company to come up with the cables and a bit of controlling software.

The Mega STE particularly is an excellent choice for document processing. With *Calamus SL* appearing very soon, the ST will have a serious rival for the massively over-priced Apple DTP packages such as Quark *Xpress* and Aldus *Pagemaker*. What's more because of the Mega's switchable hertz rate, all the existing ST software can be used on the machine.

The Falcon computer, with its CD-I drive, if given the chance, could easily give top of the range Apples are run for their money. For example, a modular DTP package could be stored on CD, along with hundreds of fonts and printer drivers. The user could then set up the system to suit their own particular requirements.

Gleadow told me that Atari was even thinking of bundling an early version of Calamus with its Mega STE. The only question which I have, is just how much this bundle would cost on top of what is already a pricey machine?

STyle and Book slot into this new ethos at Atari quite conveniently. The portables, with their high resolution screens and large memory capacity would mean that DTP needn't be restricted to the office, it could quite easily be carried out on a train or plane.

The only hurdle in Atari's way is convincing existing or prospective Apple users that they are going to get the

Continued on next page ➤

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◀ same after-sale service from it. The user support for Apple computers is second to none, the machines are seen as professional engines for professional uses. If Atari manages to convince these people that it too can offer a professional support service, then people might start taking Atari seriously.

PAGESTREAM & CALAMUS UNDER CHALLENGE

Adding weight to Atari's argument that the ST range is the ideal engine for desk top publishing, comes the announcement of a brand new program called *Saxon Publisher*. This is being distributed by Surface UK and costs £199.95.

Saxon Publisher offers some extremely professional features which are going to seem very tempting to someone who's got a serious publishing job to do, features such as Compugraphic and Postscript support.

Postscript downloadable fonts are supported including Compugraphic, Adobe types 1 and 3, Pagestream and Agfa Compugraphic. There are also custom utilities to convert PostScript fonts to *Saxon Publisher* format.

Standard fonts are included with the package, these include Avant Garde, Helvetica, Bookman, New Century Schoolbook, Courier, Palatino, Times and Zapf Chancery and Dingbats. These can be scaled up or down to any point size, with the resultant text automatically hyphenated.

Apex colour separation, multi-page preview, Postscript screen preview, alignment tabs and metric and points/picas are supported. One excellent feature is the ability to specify colours as being composed of differing percentages of yellow, cyan, magenta and black inks, along with an ink impurity recognition function.

Contact Surface UK ☎ 081 566 6677.

MASTER AT MATHS

Co-processing boards are the sort of hardware that you can't really envisage a use for. That is until you start using a CAD package properly, or indeed any processor intensive program.

TC Developments has decided that there's plenty of ST owners out there, who'd love to free their CPU of intensive mathematical calculations and has released a 68881 board with a 24MHz clock speed.

In use, this would mean that trigonometric and logarithmic functions can be performed about 3,000 per cent faster; so before you rush out and buy one, bear in mind that it isn't going to speed up your favourite shoot-'em-up.

Certain packages already support co-proccesors such as this; the ultra-expensive drawing package *DynaCADD* has this option built in. If you'd like to add these routines to a program yourself then TC developments can supply you with libraries for Prospero and Hisoft C.

The board runs on all STs and doesn't require any soldering, it simply slots straight on to a spare socket on your ST's main circuit board. The coprocessor costs £189.95, ☎ TC DEvelopments on 0937 581145.

Andy Hutchinson

Andy Hutchinson is the news editor on ST Format, out every month.

IT'S JIMMY WHITE'S SNOOKER 'INNIT

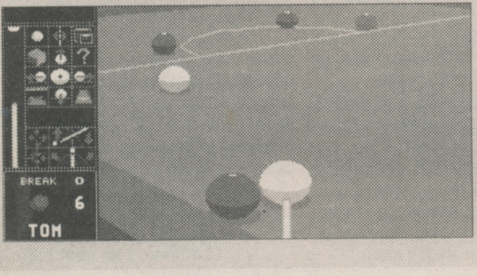
Alright, so snooker's one of those games it's hard to be ambivalent about; you can either sit there for hours gazing in awe at the players cue ball control skills or alternatively reach for the remote control and watch an interesting gardening program instead.

The game of snooker has now been brought to the ST, courtesy of Virgin. This is a full simulation of the game, including computer controlled players and a full rulebook. The table is a fully light shaded 3D creation which scrolls extremely smoothly around the screen.

To take a shot you need to move the table around the cue ball. This isn't as difficult as it sounds, a plethora of icons enable you to line up shots very precisely. Then when you're ready, you can chalk your cue (no, really), set the power and take the shot.

Side-spin and top spin are both included on the icons list, so it's easy (ha!) to get the cue ball to end up close to where you wanted it. Some excellent sound samples accompany the game, when you pocket a ball, or make a decent break for example.

One of the best (but most trivial) features occurs when you don't do anything for about ten seconds. A swarms of flies descends on the table, or the balls stick the tongues out at you. It's brilliant fun and should be out on the Virgin label within the next month.



• Virgin brings snooker comes to the ST – it's easy to line up a shot, but don't take too long or the snooker balls will stick their tongues out at you or you'll be surrounded by flies!

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- **Borland bags Ashton Tate and dBase**
- **Pagemaker 4.0 book for beginners**

NEWWAVE TOOLBOOK

Asymetrix has announced that it will extend its *ToolBook* application development product for Windows 3.0 into the HP NewWave Desktop. This will mean that *ToolBook* for NewWave will allow you to construct fully 'NewWave aware' applications.

Both products' script language will be included in the new ToolBook (ie OpenScript and Agent Task), so you will be able to record Agent tasks that include ToolBook books that will be able to invoke Agent tasks.

Stuart Jones, the NewWave Product manager, said: "This is the first development system which allows users to develop fully aware HP NewWave applications quickly and easily, without using the Windows or HP NewWave software development kit."

☎ Hewlett-Packard is on 0344 361263

HAMMY SHAREWARE FOR SATELLITE SPOTTING

'It's the final part of the HAM Radio listing this week but it'll be going out with a bang thanks to a couple of excellent progs. In two week's time a new shareware subject will raise its slender head – text adventures!

First out of the bag this week is *PC-Track 2.1* a wonderful program that provides on-screen tracking of non-geosynchronous communications satellites (the ones that orbit Earth the opposite way to which the planet is spinning!) in real time, using a *Mercator* projection world map.

It includes a satellite database of up to 100 entries with predicted positions, azimuth and elevation charts. It can also calculate the circular and elliptical orbits of satellites. Version 2.1 can track up to eight satellites simultaneously, and in 3-D to boot.

***WORLI Packet Mailbox 12.0* is a long-established and popular mailbox program. It can run under DoubleDOS or Desqview thus enabling multiple copies to be operated on multiple ports. All the required utilities are provided as are most of the popular TNCs . Contact: PD & Shareware Library, Winscombe House, Beacon Rd., Crowborough, East Sussex TN6 1UL.**

☎ 0892 663298

PENDOS FOR NOTEBOOKS

Communication Intelligence has announced PenDOS, a pen-based operating environment that works with standard DOS applications on 386-based notepad computers.

PenDOS enables any mouse-capable DOS application to use pen-input without requiring any extensive modification, according to the Redwood Shores, California, company. The pen interface supports gesture commands and a writing window. As soon as I get a UK contact number I'll pass it on.

FOXPRO 2.0 ARRIVES

Fox Software of Toledo, Ohio, finally began shipping *FoxPro 2.0*, a *dBase*-compatible database with greatly enhanced query performance and integrated SQL. *FoxPro 2.0* costs $795 for single users and $1,295 per server.

GRAB A WINDOW

With version 3.2 of Inner Media Inc's screen capture and image management product, *Collage Plus*, users can do some pretty amazing things with Windows displays. You can capture pull-down menus, crop a specific region of a Windows screen and save an image to the Windows clipboard.

Collage Plus retails for $129; upgrades are free if purchased after 1 June; before upgrades cost $35.

☎ Contact Inner Media in the States on 0101 603 465-3216.

DOS 5 CORNER

Having trouble with DOS 5 and QEMM? Here's a typical problem. If you use QEMM BUFFERS to put the buffers into the high memory you may get the message 'buffers requires DOS 2 or 3'.

The answer is to use the SETVER utility in DOS 5. Make sure the driver is loaded then use the command 'SETVER BUFFERS.EXE 3.30'. This won't take effect until the system is re-booted.

BORLAND TAKES OVER

Well Borland actually did it as reported in *Express* last week. The company finally captured Ashton-Tate for more than $440 million.

Borland is currently the number three PC software developer behind Microsoft and Lotus. With the merger it now becomes a $500 million company. Ashton-Tate will become a wholly-owned subsidiary of Borland, but neither company would comment on details such as layoffs of Ashton-Tate employees or where the company is going to be based.

If everything goes smoothly, Borland will also have gained a little more muscle in foreign markets. More than 70 per cent of Ashton-Tate's revenues last year came from non-U.S markets. Borland also gains a network of re-seller ties and a handful of well-known products, including *Applause*, *MultiMate*, and *FrameWork*.

But the real benefit to Borland is

Continued on next page ➤

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Access VISA

◄ *dBase*: the program, the language and the huge installed base of users.

The acquisition ends several difficult years for Ashton-Tate.

BOOK OF THE MONTH

Pagemaker 4.0 is a perfectly splendid DTP program from Aldus. However, it is rather large with a vast array of features. Thus, about 16 million books seem to have been written for it.

I recently received Kuma's effort – *Pagemaker 4.0* for Windows by William B Sanders. This book is aimed more towards the beginner. As such it is nice to see hints and tips on Windows 3.0. I'm sure many *Pagemaker* users will purchase Windows 3.0 just so that they can run *Pagemaker 4.0*.

The book methodically explains each feature while highlighting version 4.0 improvements and additions. Illustrations are scattered throughout. No real focus is given for the likes of Postscript, Pantone, and other technicalities although they are briefly mentioned. However, given the target audience these factors are of no great concern.

Spanning 350 pages printed on relatively low quality paper (which keeps the price down) and costing £19.95 *Pagemaker 4.0 for Windows* can be heartily recommended for any Pagemaker 4.0 novice. Available in the UK via bookshops, computer stores or from Computer Manuals.
☎ 021 706 6000.

Paul Rigby

SPECTRUM

- **Budget bargain! Four games for £2.99**
- **Electronic magazine *Outlet* carries on brilliantly**
- **Give Dizzy a good poke and make him immortal**

4 FOR £3

The Spectrum software scene is well stocked with bargain buys at the moment as middle-aged classics are re-released for a few quid, original budget games are better than ever and ground breaking stuff like the *3D Construction Kit* all sit together on the shop shelves.

But foremost in the value stakes and most worthy of a large red bargain stamp are the budget Quattro compilations. Put together by Code Masters (who else?) these are four game packs based loosely around a common theme and priced at a mere £2.99.

Quattro Racers is one of the latest and offers good value for money and huge amounts of joystick juggling for a small outlay.

First up there's *BMX Simulator 2*, a simple yet oh so addictive *Supersprint* style overhead viewed race game with nice gimmicks like an action replay and simultaneous four player games! Graphics and sound belie its budget roots and the option to load harder courses means you could be playing this one for quite some time.

Mind you, you'll probably want to have a go on *ATV Simulator* before long. This is a smoothly done, side view race against the clock as you sit astride an All Terrain Vehicle and attempt to negotiate no end of obstacles. It's endowed with good animation and a fantastic amount of playability.

BMX Freestyle Simulator isn't quite as good and takes alot more practice to be able to play with any kind of success as you try your hand at freestyle, jumps, halfpipe, wheelies and such like.

Finally there's *Jet Bike Simulator* which returns to the overhead race style format of *BMX Sim* as you speed around a harbour with various watery obstacles and lots of buoys to get round. The inclusion of a simultaneous two player contest is a boon here.

For £2.99, *Quattro Racers* offers exemplary value for money and more wind blowing through the hair racing action than you'll find anywhere else.

The communal nature of most of the games means fun for all the family, or fun for families of Speccy owing speed freaks into BMXs at any rate.

ELECTRONIC ORGAN

With CD-I and CDTV, interactive, on-screen magazines could well be a huge entertainment medium in a few years time. So let's not forget the early pioneer of the form, the *Outlet* drive/tape based organ for the Speccy!

It is nearing its 50th issue and with a birth date of 1987 has to be one of the earliest loadable publications for any computer. And it's managed to maintain a very high standard for the two years I've been reading it. The two most recent issues, for June and July, both boast a nicely presented mix of text to read and programs to load which should interest anyone who doesn't use their Speccy just for games playing.

Highlights of the June edition include extra BASIC commands for the +D, an excellent version of *Life*, the classic computing standard, a SAM to Spectrum via +D/Disciple disk utility, a highway code quiz and a decidedly kicking selection of 128K music.

The July issue is equally as sumptious with a Specdelic sound-to-light generator, a program called *Big Totals* that increases the Speccy's number handling capabilities considerably, some clip art, a nifty routine that scrolls text across the top of the screen in the border, *Rugs* – a weaving pattern generator and finally, *Trail Racer*, a super fast, very difficult, budget standard racing game with excellent sound FX. That's as well as screenfuls of letters, serious software and hardware reviews, news, tips and classifieds all devoted to the worship of

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that computing god we know only as the Spectrum. There's a special, SAM Coupé specific version as well.

Outlet is unconditionally recommended, encourages and thrives on readers' ideas and contributions and celebrates the Speccy every month for a reasonable price. Get hold of a copy from Chezron Software, 605 Loughborough Road, Birstall, Leicester LE4 4NJ. It's available on every format know to man (cassette, +3, +D/Disciple, Opus and SAM disk plus Microdrive cartridge) and your first issue only costs £2.50

EASY PEASY

I like questions I can answer, so thanks to Ian Gittings of Oxford for the following demand – "Where can I get a new power pack for my +2. The original one died suddenly and for no apparent reason recently."

Power supplies are easy to get hold of, whatever type of Speccy currently has a space on your desk and a place in your heart. For 48K power packs try Bentleys (251 Newcastle Street, Burslem, Stoke-On-Trent, Staffs ST6 3QW) which advertises them for £10. +2 packs can bought for £18 (plus £2.50 P&P) from SCS Components, 218 Portland Road, Hove, Sussex BN3 5QT. The same place also has +3 supplies for the same price.

One place I've tried before is Omnidale Supplies, 23 Curzon Street, Derby DE1 2ES. Send an SAE or phone them on 0332 291219 for power unit prices. Hope that's sorted out.

Remember to tell them whether you're +2 is an original grey one or a sleek noir +2A. If it's the latter you'll probably be alright with a +3 pack.

INFINITE DIZZYS

We all know how popular Code Master's range of games featuring that lovable(?) egg type character, *Dizzy* , are so I thought it might be a good idea to offer hacks for as many of the series as possible. Here then are Multiface pokes for the original *Dizzy* and the latest addition to the saga, *Magicland Dizzy* plus a routine for *Dizzy 3* (simply type in the listing, save it for future use, RUN and start your tape from the beginning).

Unless you harbour a deep seated pathological hatred for the smug ovoid git, you're bound to own one of the three, so get cheating and make *Dizzy* immortal. Thanks once again to our old pal, Alan Johns for the latter two hacks.

DIZZY 35272,0: 35286,0 – Infinite lives
59644,1 – Turbo speed
54216,0 – Immortal

```
10 REM DIZZY 3
20 REM BY ALAN JONES (FOZ)
30 CLEAR 24319: FOR F=23296 TO
23325
40 READ A: POKE F,A: NEXT F
50 RANDOMIZE USR 23303
60 DATA 175,50,25,246,195,0,97
70 DATA 221,33,198,92,17,0,1
80 DATA 62,255,55,205,86,5,48,241
90 DATA 62,91,50,62,93,195,198,92
100 DATA 999: REM END MARKER
```

MAGICLAND DIZZY – 29622,0 – Inf-lives

Robin Alway

CPC

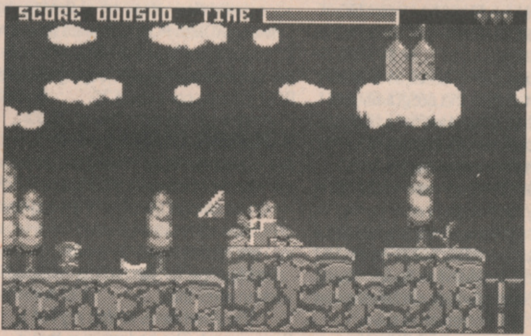
- **Loriciels new game, *BuilderLand*, previewed**
- **Can you transfer programs to ROM?**
- **Should RBI2 have been a Speccy port?**

BUILDERLAND

French software house Loriciels was at one time considering pulling out of the CPC market in the UK, but now there are at least two new games heading our way across the channel.

One of these is *BuilderLand*. Now it's rather difficult to describe this game. It's a bit like the 16-bit smash *Lemmings*, where you have to help thousands of the little creatures reach safety in the face of a hostile environment and their own innate stupidity.

In *BuilderLand* you're only trying to help one character – Melba – progress across the screen. It's a horizontal scroller and it moves with all the pace of an arthritic slug. In this case, though, it's a good thing, because that gives you more time to place blocks, ramps and other objects in his path to prevent him coming to a sticky end. It's tough, but it looks very good indeed.



• *BuilderLand is a horizontal scroller with a difference. Not much fast action, but lots of puzzles.*

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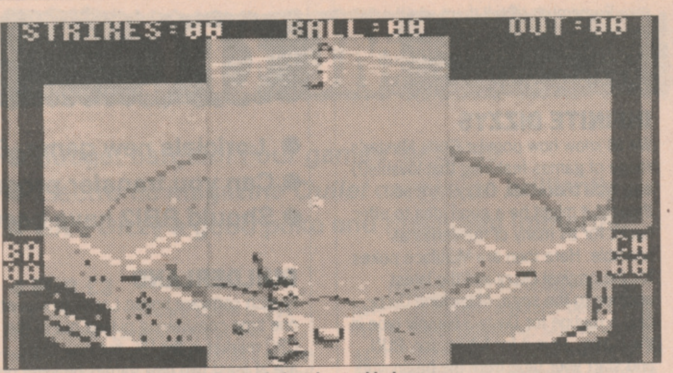
DON'T DO AS I DO...

Here's a story with a moral. Once upon a time there was an editor who knew that the last thing he would tell people to do was fiddle with leads while they were connected to computers and peripherals. But this editor thought he knew better. He thought it wouldn't matter if he fiddled with the lead connecting his 464 with his Citizen 120D. And what happened? Guess. I blew the darn thing up. The Citizen, that is, not the 464. I feel such a fool.



• *RBI2's graphics are colourful enough, but they're blocky too.*

ROOM ON THE ROM?

Adam Walker of Aberdare has an interesting question about ROMs:

"I use *Tasword*, CP/M and the *Mini Office* database frequently and I was wondering if it would be possible to transfer these programs on to ROM, so that they could be plugged into a ROM board for easy access? If this is possible, what is the biggest program a ROM could hold, and how much would a ROM board and the items to transfer the programs cost?"

Well the bad news, Adam, is that it's impossible to transfer the programs you describe to ROM. Programs for use on ROM have to be specially written versions, since they use different areas of the machine's memory. You could be in luck with CP/M though, since Graduate Software has developed a way of transferring it to ROM. You need to send your CP/M master disk and a cheque for £24.95, though. Graduate Software is at: 14 Forrester Avenue, Weston on Trent, Derby DE7 2HX. You can also get the word processing program *Protext* on ROM too, and that's available for £25 from: Arnor Ltd, 611 Lincoln Road, Peterborough PE1 3HA.

You can get 16K on a single ROM chip, but larger programs can be accommodated simply by switching between ROMs. ROM boxes cost around £25, but if you buy one from Arnor at the same time as you're buying a *Protext* ROM it'll only cost you £20.

YOURRR OUT!

RBI stands for 'Runs Batted In', and it's the name of Domark's new baseball simulator. I took a look at the program on a Speccy (yuk!) a couple of weeks ago and it looked pretty good – I was rather looking forward to the Amstrad version after that.

The good news is that it's not a Speccy port. The bad news is that it should have been! Unfortunately, the mode 0 graphics, although colourful, are blocky and confusing, so that a lot of the appeal of the game on the Spectrum has been lost.

But what about the gameplay? Well before you can actually lay bat to ball, you have to chunter through some rather tedious options screens. Those out of the way, you get to pitch your first ball. Nothing to it – press Fire and then quickly move the 'stick according to what kind of spin you want to put on the ball. After that, it's up to the batter... the display changes if he hits the ball, and you see your fielders charging around the field in pursuit of it.

If your pitches are good enough to get past the batter three times, he's out. Get three batters out and it's your turn to go in there and try and slog the ball out of the park.

This is the easy bit. Clouting the ball is simply a matter of timing your stroke. The ball doesn't travel too fast, so it's not difficult. That's the trouble with *RBI2*, it's all a bit one-sided. Batting is easy and pitching/fielding isn't. The graphics are colourful, but just too blocky, and the sound is nothing to write home about. Bit of a disappointment this one. Price is £10.99 cassette, £14.99 disk.

CHEATING TIME!

Alec Scott of Staxton has a cheat for the excellent budget game *Scooby Doo and Scrappy Doo*. You can get infinite lives by getting to the options screen and then pressing the keys P, L, O, N, C and S simultaneously. The border should flash to show you that it's worked.

Meanwhile, Graham Smith from Street has a poke for *Prison Riot* which gives you strength, time and keys.

```
1 ' Prison Riot-By Graham Smith
2 ' Infinite strength, time and
3 ' keys   (tape)
4 '
10 DATA 2a,09,00,22,8c,00,21,83
20 DATA 00,22,09,00,c9,f5,3e,05
30 DATA 32,04,86,3e,50,32,07,86
40 DATA af,32,1b,a1,32,3c,a1,f1
50 DATA c3,43,81,e5,21,6d,00,22
60 DATA 34,81,e1,c3
70 FOR j=96 TO 139:READ a$
80 x=VAL("&"+a$):y=y+x
90 POKE j,x:NEXT
100 IF y=3788 THEN CALL 96:RUN"
110 PRINT"data error
```

Rod Lawton

Rod Lawton is editor of Amstrad Action

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C64

- Thalamus' stunning compilation
- Shoot some pool American-style
- Programming without borders

GET YER MITS ON THE HITS

The original HITS compilation was released back in 1989, and is reputed to be one of the best-selling compilations ever. Not surprising, as it contained *Sanxion, Delta, Quedex, Hunter's Moon, Hawkeye* and *Armalyte*.

None of these games failed to gain a prestigious accolade, in fact nearly all were number one in the charts. How can publisher Thalamus follow that? Easily...

● *Summer Camp* is a flick-screen arcade game, reminiscent of *New Zealand Story*. You play Maximus Mouse, and your aim is to recover the sacred 'Stars and Stripes' flag which has been stolen. Without it, the Summer Camp cannot open for the holiday season – oh dear. On each screen an ACME crate must be collected, but this is easier said than done. There are a multitude of evil creatures, such as mad hens, which vary from level to level. Maximus can collect icons – melons allow him to shoot, the '8 ball' acts as a helpful platform and the helicopter lets him fly.

There are four levels in all, but the game is by no means easy. At the end of each level Maximus must assemble a vehicle in a panic-inducing puzzle section. For example, on Level 3 a rocket must be built to fly him to the moon (as you do).

Graphics are colourful, well drawn and detailed. Music is jolly (even if there are only two tunes) and spot FX are adequate. Great fun, for the kids.

● *Heat Seeker* is perhaps the runt of the litter, but by no means is it a poor release. The aim is to collect flames from around the forests of Tantris. When enough heat has been amassed, it must be given to the life-saving Triphyllos plants, which will open to shield the planet from acid rain.

The main character is a brilliantly animated leg, on the top of which sits a ball (which can be sent off to collect the flames). As soon as a level is completed, it must be tackled again at nightfall. Infra-red tactics must be employed here, but there is a flash gun help you.

Heat Seeker is unusual, both in the gameplay and in concept, but is playable nonetheless. The graphics are wonderful, as is the animation, and the FX are very atmospheric. Nothing spectacular, but not to be sniffed at.

● *Snare* is a puzzle game with a difference. The player controls a ship which moves over the vertically-scrolling play area. When the ship is turned left or right the screen snaps through 90 degrees so that it is impossible to watch someone else play the game and keep track of where they are! The aim is to get to the end of the Snare; rumour has it that a millionaire put his most prized possession there.

There are 20 levels in all, with all manner of puzzles to solve. There are different coloured tiles which speed up your craft and are vital to puzzle solving. There are other inhabitants too – some not so friendly. Thankfully you can shoot, jump, and leave a solid trail behind you, although on some levels this is prohibited by atmospheric conditions.

Snare is a superb game with colourful, fast moving graphics and some wonderful Martin Walker sonics. But be prepared for some frustration!

● *Retrograde* is a fast shoot-'em-up from the APEX boys and revolves around seven furious levels. Your home planet is

Continued on next page ➤

AND NOW FOR A BORDERLESS C64...

One of the more interesting advances in C64 programming techniques has been the screen borders – or rather, the lack of them. About 50 per cent of all recent games utilise the border in some way; *Armalyte*, *Creatures*, and *Wizball* all have status panels in the borders, effectively expanding the play area. Indeed, *Creatures II* allows the player to leap about freely in the top border (as did *Nemesis the Warlock*).

It's OK for professional programmers, but what about you and me? Surprisingly the borders can be 'taken out' using a BASIC listing. What's more, when sprites are used (with BASIC) they too can be placed in the top or bottom borders! Simply type in the following listing, SAVE for any subsequent use, then run it and you get a borderless C64.

```
10 F=4915210 READ A
20 IF A=255 THEN SYS 49152:STOP
30 POKE F,A:F=F+1:GOTO 10
40 :
50 DATA 120,169,34,141,20,3,169,192
60 DATA 141,21,3,169,249,141,18,208
70 DATA 141,14,220,169,1,141,25,208
80 DATA 141,26,208,169,27,141,17,208
90 DATA 88,96,169,1,141,25,208,238
100 DATA 32,208,173,17,208,41,247,141
110 DATA 17,208,173,18,208,208,251,173
120 DATA 17,208,41,127,9,8,141,17
130 DATA 208,206,32,208,76,49,234,255
```

The program pokes a machine code program into memory at $49152 and the SYS jumps to the routine. When you run, the border may be cluttered with garbage – a hefty POKE 16383,0 will clear this. The program is self-contained, so it can be incorporated into your own BASIC programs.

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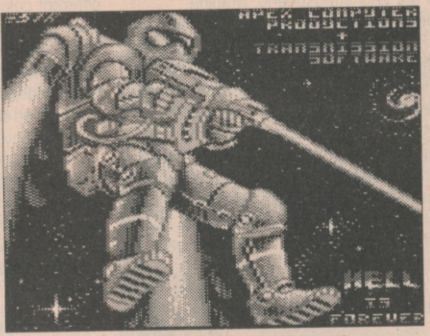

• Retrograde *– one of the games on Thalamus' latest compilation. Every game is original, aesthetically pleasing, and playable.*

◄ threatened by seven evil tyrants and you must get rid of them. Each level comprises of a horizontally-scrolling section and there are a number of doorways which lead to vertically scrolling ducts. Aliens shot on the planet surface leave ARA currency behind, which can be used to buy extra weaponry in the shop. Planet Busters can also be primed here and must be deposited at the bottom of each duct.

There is a huge array of extra weapons to buy, which can be clipped on to your suit. You also have a mighty powerfist which can be upgraded as well. At the end of each level comes a massive nerve centre, which must be destroyed within an alloted time.

Retrograde is one of the best games for the C64 and ranks alongside *Armalyte* for sheer alien annihilation. Superb graphics with loads of variety and mindblowing sonics to boot.

- *Creatures* – last but not least, and not surprisingly the best-selling C64 game this year. Clyde Radcliffe sets out to rescue his kinfolk from a fate worse than... er... something really ghastly.

Our hero traverses the horizontally scrolling landscape, tackling all manner of weird creatures. He has lots of weapons to use, not least his large flame breath. Midway through each level, Clyde visits the friendly witch's hut to buy more weapons, and then it's on to the second part of the level. Each section has its own obligatory large mother-aliens, but there is also a torture chamber for each level; here one of Clyde's chums is being mercilessly tortured by some nasty pieces of work – it's up to you to save them!

The thought that has gone into *Creatures* is stunning, especially the torture chambers. The graphics are cute, extremely colourful and never fail to raise a smile. Sound is a rather odd mix of burbly FX and some lively music. Amazingly original and great fun – it's a pity the game is only six months old.

The Hits 2 is a compilation not to be missed. Out soon on cassette (£16.99) and disk (£19.99).

Andrew Roberts

MACINTOSH

- **Details leaked on Apple's new portable**
- **Bargain upgrade offer for *WordPerfect* users**
- **Aldus' new *Freehand* and *Pagemaker* combination**

RUMOURS...

- After a hearing which took place on 8 July, federal judge Vaughn Walker has declared that January 1992 will be the end of the "discovery" period in the Apple Computer vs Microsoft and Hewlett-Packard case. This means that the way is open after this date for a full jury trial, if the parties have not settled before then.

After three years, it looks like the case is nearing the end of the preliminaries – now Apple will have to prove to a jury that its claims against the other two companies (that the Microsoft Windows and Hewlett-Packard NewWave GUIs infringe on the copyright of the Mac interface) are valid.

Judge Walker could have dismissed the case at the hearing, so his decision that a jury trial is possible must be encouraging to Apple.

- According to on-line news service *Newsbytes*, Apple has announced that its new manufacturing plant in Fountain, Colorado will be used to manufacture its new portable Macintosh. This is a breakthrough in Apple's corporate communications – until now, Apple has not officially confirmed that a new portable is being developed. Indeed, the company has actually said that it hopes to introduce the new machine before the end of the year – informed rumours suggest an 21 October roll-out.

On the same subject, an artist's impression of the new Macintosh Portable in American magazine *MacWeek* has led to much speculation that the illustration was less of a speculative impression and more of an accurate diagram. 'Slightly informed sources' reckon that the diagram – which shows a Mac with a trackball situated centrally below the keyboard, rather than to one side like the current Portable – is so accurate that Apple in the US is hopping mad, trying to find out who leaked details.

It's unlikely that the source will be discovered, however, since prototypes of the new machine are thought to have been shipped to hundreds of developers over there. At the present time, it's thought that no-one on this side of the Atlantic has seen the new machine – and that includes staff at Apple's UK headquarters in Stockley Park.

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- Russian computer company Intermicro has recently announced that it is to be the first Apple-authorised distributor of Macs in the USSR. Apple has confirmed that an agreement with a Soviet company is due soon, but has not yet provided any more details.
- Apple has announced that it has made a net loss of £31 million in the third financial quarter of this year. This is because it spend some £81.7 million on "re-structuring, cost reduction and other activities that are now underway." Shipments of Macs increased by more than 60 per cent compared to the same period last year, and net revenues increased by 12 per cent. According to John Sculley, Apple's chairman and chief executive officer, "during the quarter we took actions aimed at positioning Apple even more competitively for the future," and added that he is "committed to redesigning Apple's infrastructure and financial model so that they are both sustainable advantages within the dynamics of this changing industry."

PRODUCT NEWS

WordPerfect UK has announced a number of special offers to encourage people to buy its *WordPerfect 2.0* word processor. Users of Microsoft *Word* need only pay £71 to upgrade to *Wordperfect*, while earlier users of *Wordperfect* can upgrade to the new version 2.0 for only £51.

- Aldus UK – creator of *FreeHand* and *PageMaker* – has launched a package called Aldus *Creative*, which is a combination of those two best-selling programs. The package costs around £995 and includes a voucher entitling purchasers to attend a one-day workshop to familiarise themselves with the programs.
- Mac programmers fed-up with having to wade through *Inside Macintosh* volumes I to V in order to find the exact syntax of some obscure ROM toolbox command can now buy an on-line reference tool to simplify things. Symantec, creator of *Think* C and THINK Pascal, has introduced a package called *Think* Reference, which includes the information from all five volumes of *Inside Mac*, including description of *Toolbox* routines, programming tips and fragments of code. The program has cross-referencing facilities, and the data can be searched by name, keyword and structure, among other methods.

  In the US, *Think* Reference will cost $99 – so expect it to sell for roughly £100 over here. It requires at least 1Mb of RAM and around 3.5Mb of hard disk space. You can contact Symantec over here on 0628 776343.
- Those of you with loads of money and a Mac SE/30 or IIsi can now buy an accelerator board which is claimed will increase the Mac's speed beyond the IIfx and even Sun's SPARCstation.

  Fusion Data Systems claims that applications such as spreadsheets should run up to 300 per cent faster than the IIfx, while graphics and DTP programs will run up to 185 per cent faster. The board, called the TokaMac, is System 7-compatible, and should run with most Mac applications. It will cost $2,995, plus $50 for an 030 processor-direct card. Call Fusion in the States on 010 1 512 338 5326.
- Heyden & Son has reduced prices on all monitors from E-Machines. A 16-inch, full-page Sony Trinitron colour monitor now costs £1,795+VAT, with a standard 8-bit interface card for the Mac II family at £295+VAT and a 24-bit accelerated card £1,125+VAT. Heyden & Son is on 081-203 5171. **Ian Wrigley**

POSTCARD FROM AMERICA

Sometimes a glorious event occurs that reaffirms one's faith in the innate stupidity of software users and developers. This happened with the shareware program *MaxAppleZoom*.

***MaxAppleZoom* is an Init CDEV that reprograms a standard Mac II video card to display a 704 x 512 pixel screen, instead of the normal 640 x 480. It only works with 4-bit and 8-bit Apple video cards. This fantastic hack is by Naoto Horii of Belgium.**

The program starts the monitor out at the smaller screen and then gently intensifies the resolution of the video signal. Other monitors, that aren't as adaptable as Apple's will just give a black screen to a MAZ-produced signal.

There seemed to be plenty of interest in this hack. Who wouldn't want the additional screen real estate for a nominal price? But perhaps not enough registered users to satisfy the author. He warned in the last release (1.31) that "If I haven't received a reasonable feedback by then, I won't release an updated version."

Suddenly last June, the product stopped working—everywhere. Horii had included a time bomb to bring everything to a MaxAppleStop. This paranoia code checked information on the video board, which slot it was located, and then calculated a date. Boom!

Moving the video board did make a difference. For each slot, the expiration date moved forward 12 days, 3 hours, 16 minutes, and 17 seconds (+/- 5 seconds). Since the author refused to come forward with an updated version, all kinds of patches and fixes appeared. Programs like Recharger changed the date before the MAZ loaded, and then changed it back. This solution worked for some, but added yet another Init into over-packed systems.

Repair patches tried to prevent the bypass procedures from executing. They didn't stop MAZ from checking the video slots, but redirected the result of the check. No matter what the result, the program loaded. Some idiot 4-D programmers wrote custom wide-screen applications that required MaxAppleZoom to operate. I could wax to the max on reliance on hacks.

David Morgenstern

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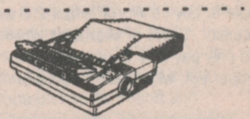

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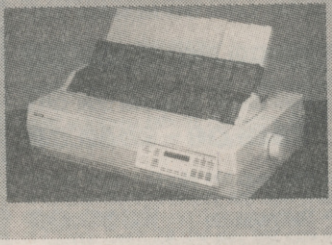
WHOLE WIRED WORLD

Cheaper 'phone charges for modem users courtesy of the EC; budget hard drives for the Amiga; dot matrix printer companies go into battle... all this and much more from Steve Gold our intrepid reporter on the wire

IT'S WAR ON THE DOT MATRIX PRINTER FRONT

It looks as though another round of price cutting and new model releases are due on the dot matrix printer front.

Following hot on the heels of Epson's recent new printer releases at PC Expo in New York, Fujitsu has powered in with the DL3600, a 24-pin printer that retails for just $949.



• Epson dot matrix printers are being rivalled by Fujitsu's recently released low cost D3600 24-pin printer.

The key feature of the DL3600 is the software that comes bundled with the unit – one of the applications is ZipType, a PC-resident utility that enables the printer to be used as a typewriter, be controlled at the computer's keyboard and be programmed to create templates of commonly printed forms. Another package, DL Menu, enables the configuration of the printer to be changed from the PC, so by-passing the printer's control panel.

Fujitsu is making some bold claims for the DL3600. The Japanese giant claims that it's the fastest in its category at 360 cps. The nearest competition is the Epson LQ1170 which has a top speed of 330cps.

EC PHONE PRICE CHECK

Calling all modem users with high phone bills – the European Commission has announced an investigation into whether EC telephone companies are overcharging for their international phone calls.

A preliminary examination, the agency says, has indicated that alleged high charges for calls both within the EC and to other countries could be the result of anti-competitive arrangements.

EC Competition Commissioner Leon Brittan said that the commission has found evidence that consumers are paying too much for calls outside the EC in proportion to the costs of the services. He says they also pay two or three times as much for a call to another EC country as for one covering an equivalent distance within their own country.

"The decision to proceed with a formal investigation shows the commission's determination to ensure that consumers and business users benefit from maximum price transparency and full compliance with the competition rules," he said.

So what's likely to be result of the investigation? Reduced international call charges, that's what. Although this doesn't affect trunk calls directly, it's likely to put a lot pressure on BT to reduce them as well, or at least hold prices steady for a while.

US E-MAIL COMPANY LINK

At long last, it looks as though electronic mail services are getting their act together with directories. Thirteen US E-mail companies in the US have agreed to link the user directory of their services into a `global' DQ service, available to subscribers of all their services.

The idea is the result of user frustration. Although most of the US E-mail services are inter-connected, if the subscriber does not know the address (mailbox) of the recipient on another system, the message can't be sent.

There are now plans for a pilot DQ service – spanning AT&T Telemail, Dialcom, other E-mail and on-line services – to be launched early next year. A date for the launch of a full E-mail DQ service has not been announced.

AUTOMATED BLEEPERS

Calling all Atari Portfolio users with an alpha numeric bleeper – Teknow!, a Phoenix-based company, has come up with a software/hardware combo for the Portfolio that links to your phone line. The system allows the off-line preparation of messages to on-line radiopaging.

The battery-powered system fits neatly into the pocket and enables the user to `drive' an on-line bleeper from most phones. This saves having to call the service operator. In the UK, most of the major radiopaging services, including BT, offer on-line entry of messages.

Contact: TekNow!, 1500 South Priest, Suite 101, Tempe, AZ 85281, USA. Tel: 0101-83-800-899-7262.

THE `WORM' CASE TURNS

Just when you thought the case of Robert Morris and his famous Internet worm program was closed, along comes the Electronic Frontier Foundation (EFF) to re-open the whole affair.

Morris was convicted in January last year for his release in November 1988 of a computer worm, a self-replicating program, into computer networks that link university and military research facilities in the US. The worm infected and shut down an estimated 6,000 UNIX-based systems attached to the Internet, Arpanet and Milnet networks.

Morris was sentenced to three years probation, a $10,000 fine and 400 hours of community service. He also had to pay costs relating to his probation.

The sentence was immediately criticised, with many on the law enforcement side saying that Morris should have received a prison sentence, while others felt that, since he had convinced them that the damage was caused by error rather than a malicious act, no penalty should have been imposed.

The EFF, meanwhile, is a not-for-profit organisation in the US set up by a group of computer industry gurus to protect the rights of individuals involved in hacking cases. According to Tom Viles, a senior lawyer representing the EFF in the case, Morris' case is far from cut and dried as far as the courts are concerned.

"We will file a brief supporting Morris' contention that the 1986 Computer Fraud and Abuse Act under which Morris was charged is much too broad a statute," said Mr Viles.

PC SECURITY SYSTEM UNVEILED

Most PC security systems rely upon a key or similar device to gain access to the machine. If you lose the key, you've had it. Now a small Canadian company, Trove Resources, has come up with a hardware/software system that analyses the way you type in your password to be sure that it's really you at the keyboard.

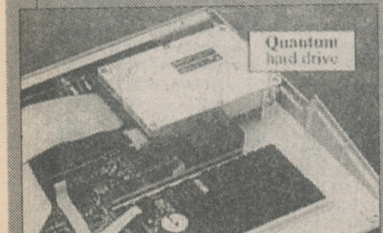
Trove's system is called Biopassword. The system 'fingerprints' a user's typing. The company claims that each user's keyboard typing patterns are unique, so a keyboard `fingerprint' can be logged and compared.

The $495 system consists of a half length PC expansion card and a software support program. As each user logs on to a PC, the security system develops an electronic signature record of that user. The user's files are constantly updated to take account of changing keystroke dynamics.

Contact: Trove Resources, Suite 505, 850 Burrard Street, Vancouver, BC, V6Z 2J1, Canada. Tel: 0101-604-684-4845 Fax: 0101-604-681-5279. ■

BUDGET INTERNAL HD SYSTEM FOR THE AMIGA DEBUTS

ICD, a company reknowned for its budget hard drives for the Atari ST, has done the same for the Amiga. This month sees the US company roll out its Prima series of hard drives for the Amiga 500 at what the company claims are highly competitive prices.



• Compact and speedy, the Prima hard drive fits inside the Amiga 500's casing.

The key feature distinguishing the Prima series from the rest of the pack, however, is that the units fit inside the Amiga 500's casing. Based on Quantum's range of 11ms access time hard drives (Quantum is known as Plus Development in the PC community) the Prima range is initially available in 52Mb and 105Mb sizes.

Both drives slot in as a direct replacement for the standard Amiga A500 floppy drive and come complete with an internal adapter and software to drive the system. Pricing has been set at $649.95 for the 52Mb drive and $899.95 for the 105Mb version.

Contact: ICD, 1220 Rock Street, Rockford IL, 61101-1437, USA Tel: 0101-815-968-2228 Fax: 0101-815-968-6888.

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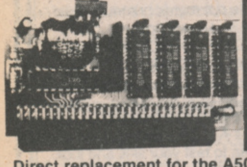

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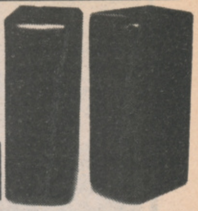

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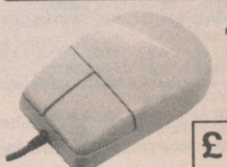

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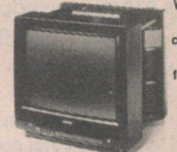

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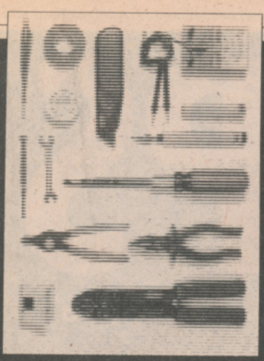


CIRCUIT CITY

Building, fixing or expanding your system can give you a lot of satisfaction. Keith Pomfret answers some of your questions on the trickiest bit of all... soldering

We get more letters and questions about solders and soldering than any other subject on the technical desk. Rather than answer each of them individually, we're explaining a little more about, what solder is here , how it works and which types of solder to use. This should help you get the best results.

LIFE AS WE KNOW IT

Without solder, there would be no way of building computers as we know them. Solder forms the 'glue' that joins components to circuit boards and makes the important electronic connections that allow electrons to flow freely around the circuit.

Solder is essentially an alloy of two metals, lead and tin. Its useful properties in an electric circuit are that electricity flows easily through it and has a low melting temperature and is therefore malleable.

If two components or a component and a termination on a circuit board are held together and solder is applied by melting it with a hot soldering iron, the solder will run across the components and when the soldering iron is moved away, will cool in a few seconds to provide a 'bridge' between the components that electricity can flow through.

When computers or any of the electronics are manufactured, a lot of the soldering is done by machine and even that which is done by hand is done on specialised jigs using a purpose built solder gun.

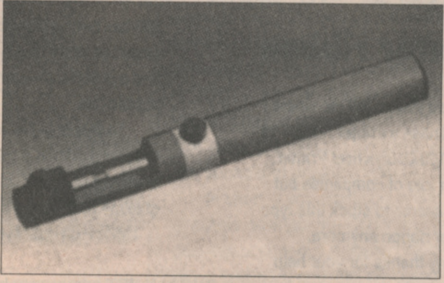
When we want to solder, we have to rely on hand and eye, with a soldering iron held as steadily as possible and the solder fed gently on to the job.

CAST IRON DECISIONS

The choice of soldering iron is up to the individual, but for close, delicate electronic work, an iron with a fine tip is obviously best. The thinner the tip, the more delicately you can work.

There are several kinds of soldering iron. The earliest, and most unsuitable, is the unpowered kind. This is a large unwieldy heavy iron that needs to be warmed in a fire or flame until it is cherry red. It can weigh a couple of pounds and although a plumber might use it for work on lead piping, it shouldn't be used on electronics.

Next is an electric iron. This plugs into the mains (or on some occasions into 12v car electrics) and comes in many variations from a simple plug in, heat up and go model to a thermostatically controlled solder station. It takes a few minutes to warm up and in all of its forms is suitable for electronic work. Another kind of electric iron is shaped like a gun and warms up in seconds. It is very convenient but its pistol shape can make it cumbersome for fine work.



• Solder blue – if it all goes wrong, this desoldering tool will limit the damage. It works like a bicycle pump in reverse and sucks the solder from the heated joint.

Finally, there's a self contained gas powered iron. This works on butane gas (also used to fill cigarette lighters) and is ideal in that it can be used anywhere without mains power. It takes a bit of getting used to but is the most flexible and versatile. It has interchangeable tips that can vary in width from 1mm to 4mm making it suitable for most jobs.

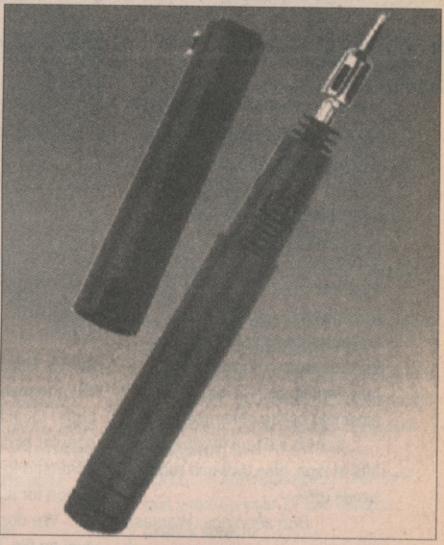
SOLDERING ON

Solder comes in many forms from the weighty bar of industrial solder used by a plumber to a fine thread of wire, not much thicker than a hair that can be used for the finest work.

The large thick industrial strength solders are an alloy of tin and lead and as such are unsuitable for fine work. In its raw form, solder doesn't flow and take very well and needs a catalytic agent to help this. The catalyst used is a powder known as flux because of its properties with regard to helping things to flow.

A plumber might dip his bar of solder in a can of flux powder before applying it to the job. This may be fine for large jobs but work around a printed circuit board where the components are less than a millimetre apart wouldn't be possible with this.

Electronics and hobby shops sell a huge array of different grades and sizes of solder, most of which are suitable for close electronics work. The magic word when buying solder is 'multicore'. This means that the solder has several cores of flux already built into it. Thus, when it is warmed up by the iron, the right amount of flux is already present in the molten solder and this causes it to flow properly.



• Gas powered soldering iron with temperature control. It requires butane lighter gas and will run for 60 minutes continuously on a full tank. Available from Tandy at £19.95.

To decide which thickness of solder you need, look at the sort of job you'll be doing most. If it's all very fine work then you'll need the thinnest, finest solder. This will be less wasteful and less messy than thicker solders but will need a more careful touch. Most regular solder users pick three grades. One small spool of the finest solder, a large spool of the next size up and a small spool of solder about 1.5mm thick for larger jobs and when working on mains equipment that has larger areas to cover.

ON THE JOB

The combination of the right iron and the correct solder for the job will make electronics work easier and the results more professional looking. Nothing looks worse than a job that is finished off with mountains and blobs of solder and components blued by being touched by a hot iron.

Make sure to pick a soldering iron that feels comfortable in your hands and always work on a clean heat-proof surface. ■

TOOLS TO GIVE YOU A HELPING HAND

As well as a suitable soldering iron and solder, there are various tools available to help the soldering job along.

These include the following:

- Helping hands: This is a small heavy metal base with a couple of arms that each have a crocodile clip for holding pieces of work steady to aid soldering. There is also a version of helping hands available with a magnifying glass to aid the eye during close and fiddly work.
- Soldering tools: a small set of tools for cleaning, scraping and poking can help your electronics work. A set of soldering tools costs no more than a couple of pounds and looks like something a manic dentist would use, all pointy metal sticks and nasty sharp things but the six different tips are invaluable to anyone undertaking regular soldering work.

TIN-TIN

To get the best results when soldering wire and cable, it should be tinned first. This means warming the cable end up with the iron and allowing a thin coating of solder to cover the exposed ends. When it comes time to join the components together, the tinned end makes this easier and ensures a better joint.

TECH TIPS

Find out how to network IBM hard disks; where to get a bubble jet printer; how to buck up a slowcoach PC and how to choose the best educational computers... with Keith Pomfret

HELP Net result

In my organisation there is a real fear of spending money on IT but with a bit of luck my section may be given two IBM PS/2's (hopefully with BIG hard disks).

We would like to have access to those hard disks from either or both machines at the same time (for example - what we have created in the way of spreadsheets on one machine may need to be read and amended by the other user).

Is such a tie-up feasible with bits of tape, blue tack and rubber bands etc?

Bob Jennings, Warsash

WELL, INSTEAD of using bits of tape and blue tack, you could try a local area network (LAN).

LANs enable computers to access each others' hard drives and would be the perfect solution to your problem. You could have only one machine with a hard drive and allow the other machines to access it, but, to be realistic, PCs really need a hard disk to be useful.

The cost of a LAN isn't too expensive, you'll be pleased to hear. The most common PC LANs is the Novell, and most dealers sell something along those lines.

HELP Printer ribbon

Could you please tell me where I can purchase a printer ribbon for a Juki 6100 Daisywheel Printer. I've tried lots of companies but nobody seems to stock this type of printer ribbon anymore.

Many thanks for your help with this problem.

Simon Hodgkins, Coventry

IN ITS TIME, the Juki 6100 was one of the cheapest ways of getting Near Letter Quality (NLQ) output. It was very popular because of this, and I'm surprised to hear that you can't get a ribbon for it.

We don't have a phone number for Juki on file, but a possible alternative is to contact WACCI on 081-898 1090 and purchase some of their amazing ribbon re-inking spray. This CFC free spray will tide you over through several re-inkings while you hunt high and low for the ribbon. If you can't find the ribbon at any computer dealer or supplier, try the regular computer shows and fairs. They are a veritable cornucopia of necessary widgets for people with ailing computers and peripherals.

HELP Bubbling jets

I am considering buying a new printer, and have decided that a bubble-jet printer sounds like a good idea.

The Hewlett Packard Deskjet 500 has been getting a lot of coverage lately, but I also want to find out about the Canon desktop bubble-jets.

To this end, I wish to write to the manufacturers asking for information. Could you please give me their addresses?

Colin Howard, Tyne and Wear

BUBBLE-JET printers are becoming a popular and inexpensive way of getting good quality output for not too much money. However, Hewlett Packard's Deskjet 500 is an ink-jet printer which is different. Ink-jet printers spray the ink on to a page, whereas bubble-jet printers, such as Canon's BJ series work on a pulse heated capillary action

Canon's low-end bubble-jet, the BJ10E, is available around the £300 mark, and HP's Deskjet 500 is priced at about £350. Both offer 360 by 360 dpi resolution, though neither is as good as a laser printer.

To answer your question, Hewlett Packard can be reached on: 0344 424898. Canon is on 081-773 3173.

HELP Games link

If I bought a Nintendo Game Boy for my son, would he be able to connect it to my PC monitor at home to watch the games in colour?

Ralph Moore, Hereford

NO, THAT WOULDN'T be possible. The Game Boy has no method of outputting to an external monitor and the display on the Game Boy is monochrome.

• There's no method of outputting from Nintendo's Game Boy to an external monitor and anyway it's in black and white.

HELP Slow PC

I have an original slowcoach 8 MHz IBM PC AT which is great except for one thing – speed. When I try to use DTP and graphics programs, it takes a digital Mogadon and slips into crawl mode.

I'm happy with its power supply, my expansion cards for scanner, sound and other peripherals are happy and without problem. I'd like to upgrade to a fast processor without total system upheaval. I realise that I could put a faster 286 in in a matter of seconds but I wonder whether a 386 can be fitted without replacing the whole

• If you've got a black suit and a smug grin, you too could carry away a PS/2 in the manner prescribed by this IBM publicity shot.

TIP! It's an outrage... the saga continues

THERE SEEMS TO be no depth or height to which you will not slide or climb to prove to us that you've got the most outrageous kit. Dan Wilson went to an auction and picked up a mainframe sized bargain for a calculator sized price. Here's what he had to say:

How about this for the bargain of the year? It was a tiny auction room in the West End and while everyone was busy looking at Amstrads and Olivettis I came across a large cardboard box with two monitors; two keyboards; two double disk drive computers; one large DEC/QUME printer with sheet feed and cut paper feed; a jungle of cables and plugs and a switching box.

Nobody seemed to know the name DEC but they all knew Amstrad, so when the Amstrad came up it fetched a silly price, slightly more than retail, but when we reached the DEC nobody made a bid. The auctioneer started at £ ... £20 ... £10. I raised what I hoped was a casual hand. And it was mine!

But there was an even bigger shock when I went to collect it the next day. An even bigger plastic box hidden away on top of an old wardrobe with all the manuals, software, disks – word processing, maths, spreadsheet etc.

And to put the icing on the cake, when I got it home and plugged it in, everything worked perfectly, and the screens were amber and not that awful green. Eat your heart out!

I enclose a copy of the catalogue page and the receipt, although you'll notice I've folded the receipt to hide the name of the auction room. A miser I am ..... Stupid I'm not!

Dan Wilson, Middlesex

Making the most of multimedia

I have money in hand or cash in pocket, depending upon which way you look at it, and want to get into multimedia. Should I go out at the end of the month and buy CDTV or CD-I?

Commodore's CDTV looks interesting but from the small amounts of technical data available so far, CD-I looks the best specified. I want multimedia for entertainment and reference, games, data and, most of all to, enjoy.

D. B. Forshaw, Reddich

• The first affordable multimedia machine available to the man in the street.

IF YOU WANT to go out next week and buy a home system, there's only one to go for and that's the CDTV (reviewed elsewhere in this issue). in terms of pure specifications alone the CD-I probably wins by a short head. The problem with CD-I though is that it's not available and the best guess is 12 months before domestic CD-I machines appear.

CDTV is a true interactive multimedia machine based on computer technology and able to process data in the same way as well as use sound and graphics from CD data disks.

In short, if you want something that's available now, get the CDTV. In the worst possible scenario, if it doesn't catch on, you can buy a keyboard and disk drive and you've got a 1Mb Amiga with floppy and optical storage.

motherboard? I don't mind having to pay for the board but I can't bear the thought of cannibalising a perfectly good machine when upgrade may be possible

Mick Drough, Coventry

IT IS PERFECTLY possible to do what you want without damaging your machine. The solution is a small board that fits into the socket vacated by your 286. You remove the 286, slot in the accelerator board and in two shakes of a processor's tail, you've a 386SX machine. This is only possible with the 386SX and not the DX. This is because the SX shares the same 16-bit architecture as the 286, while the DX is a full 32-bit processor. The AT's 16-bit architecture wouldn't support the DX chip.

With a 386SX running at up to 25MHz, you would see an immediate quickening in your DTP and also gain the other benefits of the 386 processor. these include virtuality. This means that a 386 can emulate several 8086s (the processor in a PCXT) and thus allow true multi-tasking.

If you want to try your skill at winning a card like this, you should turn to the inside back page where this week's £800 plus compo lets you win the SOTA Express/386 board If you don't win, you can get the Express/386 from CTS on 0235 559944.

Letter bug

Is there a simple way to get a letter from a word processor on a PC to one on an ST? The PC is an Amstrad PPC640 and the ST is a 520STFM. The problem is that the letter's a very long one that I want to use in a newsletter I produce on the ST. I know that I could print it out from the PC and physically stick them into the design after reducing them on the photocopier but that wouldn't be cricket.

Malcolm Devlin, Belfast

THE PPC640 has 720k 3.5-inch drives and produces a disk that can be read by the ST. This means that it's simply a case of saving the text on your PC as an ASCII file that can be loaded directly into the DTP program on your ST.

An ASCII file is one which contains codes for letters, numbers, spaces and carriage returns and nothing else. This means that it's a global file format recognised by most word processing and DTP packages.

School's Out

The school where I teach IT has broken up for the summer and it's my unenviable job to bin all of the aging BBCs and Nimbuses and replace them with something a little more up-to-date.

I am between a rock and a hard place with regard to choice.The governers are 'encouraging' me to buy PCs with the promise of free (and inappropriate) software taken from various machines they own.

The headmaster leads the 'Acorn or nothing' camp mumbling often about loyalty and dealing with people that we know and trust. Both groups are adamant that I know best and absolutely insist that I make a decision based on my own judgement of the needs of the school.

I have decided to make up my own mind and up until a week ago I was undecided. It had to be Amigas or Macintoshes and I wasn't sure which.

A discussion with Commodore left me decided that while the Amiga is a fine machine, the price drop of the Macs made it the machine for my school.

What I need to know and no-one seems to be able to answer is: Does Apple have a true commitment to education or is it happy to dominate the DTP market and leave education to the others?

Name and address withheld for sake of job prospects

APPLE IN THE SHAPE of its UK boss Mike Newton confirmed that Apple does have a firm commitment to education in the UK. He cited several examples in which the company has been actively involved in the educational market, including Apple UK recently receiving an order from a group of Scottish schools for 350 machines worth $500,000.

The Macintosh has long been perceived as an educational computer in its home market in the US. Apple UK is making inroads into the UK market by showing education authorities that the Mac, with its intuitive interface, is the ideal learning tool for students from primary to postgraduate levels. Altogether there are around 100,000 Macs in the UK educational market. ■

Write to Keith Pomfret,
Tech Tips, *New Computer Express*,
30 Monmouth Street, Bath BA1 2BW.

ABC guide to modern technology – part II

IN Circuit City, issue 141, we started to explain what all those initials in the computer world stood for. This week, it's the second half of the alphabet.

NTSC	National Television Standard Committee or, the television system used in the United States. Much less clear than the PAL system we use in the UK. It uses fewer lines, which explains why American software doesn't fill up all of the PAL screen. The NTSC format is known for losing the hue of a picture and consequently, the NTSC system is sometimes nicknamed Never Twice the Same Colour.
NUI	Network User Identity. A user's identity on a communications network, often a password.
OCR	Optical Character Recognition. An electronic way of scanning and recognising characters from a printed page.
PAL	Phase Alternation Line. A colour TV system, as used in the UK.
PCB	Printed Circuit Board. The board on which all your computer's electronic components have been soldered and connected.
PIXEL	PICture ELements. The 'dots' that make up your TV and monitor display screen.
PIN	Personal Identification Number. The code by which you, or something like your credit or 'money' card is identified and used.
PSS	Packet Switch Stream.
RAM	Random Access Memory. The memory in your computer is RAM, able to be accessed and erased by the user and computer programs.
ROM	Read Only Memory. Unlike RAM, ROM can only be read from, not to. This prevents the contents of ROM from changing. This is why operating systems are stored in this way.
RS232	Standard serial interfaces, used to control devices such as modems.
RS423	Same as RS232 (above).
SECAM	Systeme En Couleurs A Memoire. The colour TV system used in France and elsewhere.
TRL	Transistor-Resistor-Logic
UHF	Ultra High Frequency.
ULA	Uncommitted Logic Array. A group of chips which is not committed to any particular part of a computer system.
UNIX	An operating system. Popular in multi-user systems. Developed by AT&T in the US but adopted by many other computer companies. Now something of a standard, UNIX can run on the largest mainframes, right down to microcomputers.
VHF	Very High Frequency
WIMP	Windows, Icons, Mouse, Pointer. A graphical user interface uses Windows, Icons, Mouse and Pointer to control and run programs.

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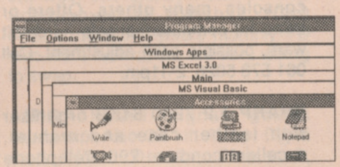
ACTING UP FOR WINDOWS

Actor 3.1 is the latest release of an object-oriented development system for Windows 3 where the code generated with Actor can be linked to Dynamic Link Libraries of functions written in languages like C and Pascal. The systems let you access up to 16Mb of memory and the memory swapping system uses a hard disk as virtual memory that lets you run applications that are up to 2Mb in size on a PC with 640K of RAM. The built-in classes in the Actor library include windows, dialogue boxes, graphics and functions for printing and managing data. More information from Neow on 0628 668334.



• The Actor library includes code for all the windows you want.

RUSSIANS GO WITH THE FLOW

Not many people design their programs with flow charts these days, but they are very useful for understanding how a program actually works, especially if you didn't write it yourself.

R-Tech (Russian Technology of Programming) is a visual programming tool for C, C++ and Pascal on the PC. If you feed in existing source codes, it produces annotated flow diagrams to show you what's going on. Alternatively, you can write your program as a flow chart with code attached and R-Tech will generate your source code from the chart.

You also get a graphic debugger with break-pointing and animation facilities that puts you back to the flow chart when anything goes wrong, highlighting the code where it thinks the problem is. R-Tech works with Borland Turbo C++, Turbo C and Turbo Pascal compilers.

Contact Tony Vrba & Associates on 0983 611119.

FUNCKEY AND FREE

Compiled database programming languages give you faster code and Nantucket's Clipper compiler is very popular. Life is now a little easier for Clipper programmers because Funckey 1.52, the developer's library for the Clipper compiler now works with version 5.01 as well as the Summer '87 release. If you're a registered user, you can get a free upgrade from QBS on 081-994 4842; if you haven't tried the library yet, you can get a free demo disk from them.

FROM C64 TO C128 AND BACK AGAIN

I'm using the Commodore 128 but I want my programs to run on the C64 if necessary. When I go into C64 mode to check the programs, I can't get back to 128 mode. Can you tell me how to do this and could I write a program to do it automatically?

Jan Horrocks, Wimbledon

Unfortunately not. When the 128 switches to C64 mode, the 128 Memory Manager Unit (MMU) removes itself from memory – it normally lives at `$FF00-$FF04` and `$D500-$D50B`. Once the MMU is gone, you can't get back to 128 mode without a hard reset.

However, if you have an Lt Kernel hard drive plugged into the 128's expansion port you can reset the mode like this because it can bypass the way the machine would normally work and rest the system to force it back to C128 mode. The command you want is `GO 128` and you could include that in a program. You need to swap into C64 mode, call up the program you want, maybe write the results or output into a file to check over at your leisure and then go back into C128 mode. That sort of program is normally called a script.

THE CHEAPEST UNIX YET?

The Mark Williams Company in the US produces a clone of the UNIX operating system for the PC that sells for $99. Coherent 3.2 costs £99 in the UK from AET on 021-766 8333. For that, the latest version of the UNIX clone includes a full version of C, including utilities and an extensive library and cgrep, a pattern search program for C source code.

There are two "shells" that act as front ends, a Korn shell clone and an improved Bourne shell. You also get the powerful troff text processor that supports Postscript and Laserjet fonts. ■

GETTING UP TO SPEED WITH QBASIC

MS-DOS QBasic
PROGRAMMER'S REFERENCE
QBasic
QBasic

QBASIC comes free with MS-DOS 5, replacing the now venerable GW BASIC (it stands for Gee Wizz, in case you've always wondered). However much you know about programming, one of these books should be what you're looking for to get the most from the language.

***MS-DOS QBasic* ● Kris Jamsa ● Microsoft Press ● 1-55615-355-4 ● £5.95**

This is a quick reference guide that contains every statement and function in the language in alphabetical order. If you want to look up the parameters for changing the screen colours or the list of error codes generated by DOS commands, this book will give you just the information you want, with example code in most cases.

If you can't remember exactly which function you need, you can look up a similar or related command and the function you're looking for will probably be listed and cross-referenced. If you have an idea of what you need to know and you want it quickly, this is the book you want.

***MS-DOS QBasic Programmer's Reference* ● Robert Arnson, Christy Gemmell and Harry Henderson ● Microsoft Press ● 1-556515-347-3 ● £22.95**

This is the first official guide to QBASIC and it's an impressive and weighty tome. The functions of the language have been grouped logically rather than alphabetically, so that all the printer control commands are in one place, next to the keyboard and joystick commands.

Each chapter starts with a tutorial that's full of examples and explanations, followed by a reference section containing the relevant commands, again with examples and a lot of useful code; the chapter on graphics has programs for drawing different bar charts. You wouldn't need to know a great deal about programming to use this book and it covers just about everything you need to know about QBasic to do some serious programming.

***Running MS-DOS QBASIC* ● Michael Halvorson & David Rygmyr ● Microsoft Press ● 1-55615-340-6 ● £19.95**

This book is ideal for someone who's never done any programming before. Clear and simple explanations and useful examples are followed by questions and programming exercises. All the answers and programs are in the back of the book, so you won't get frustrated wondering what an answer really was.

The last tutorial in the book covers debugging your programs, going through a sample program step by step and pointing out the mistakes that it's so easy to make. This is an easy to follow introduction to programming that covers the language thoroughly.

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B

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Kybernesis	081-673 7294	V21/22/22b/23

L

Labyrinth	051-724 4458	V21/23
Lamplight Qbbs	0705 811531	V21/22/22b/23
Laser Tbbs	0532 438430	V21/22/22b
Lau's Ql Bb	081-751 6096	V23v
Level 9	0926 889208	300-2400
Lightfinger's Place	0202 485723	V21/22/22b/23
Linelight	0580 212043	V23v
Linx BBS	0522 511277	V21/22/22b/23
Liquorice Allsorts	0633 279985	
Nova-net	0274 370760	V22
Liverpool Mailbox	051-428 8924	V21/22/22b/23
Liverpool Ros	051-931 4271	V21/22/23
Loch lomond	0389 55762	V22/v22bis
Loft	0442 230461	V21/22/22b/23
Logical BBS	0772 623167	300-2400
Log On In Tynedale	0434 606639	V21/22/22b/23
London BBS	081-455 6607	V21/22/22b/23
London City Mag	081-468 7648	V21/23/23v
London Connexion	081-667 1313	V21/22/22b/23
London Embassy	081-366 1778	Hst
London Guest Hse	081-748 0974	Hst/v32
London Mail Centre	081-534 1200	V21/22/22b/23
London Metropolis	081-519 1055	V21/22/22b/23
Loony Bin	0703 787489	V21/23

M

Mabbs	021-444 8972	V21/22/22b/23
Mach II BBS	0242 260 685	V21/22/22bis
Mactel Hq (grn Box)	0602 455444	V21/22/22b/23
Mactel Metro	081-543 8017	V21/22/22b/23
Mactel Phoenix	0473 610139	V21/22/22b/23
Madness BBS	0603 300947	V21/22/22b/23
Magic Castle BBS	021-430 3761	V21/22/22b/23
Magic Mushroom	0361 83641	V21/22/22b
Magnum	0274 547006	V21/22/22b/23
Magrathea	0376 24402	V23v
Manor	0980 863031	V21/22/22b/23
Marctel	081-346 7150	V21/23/23v
Matrix	051-255 0225	V21/22/22b/23

Max BBS V21/V22/V22bis/V24/V32/V42/V42bis/ 9600/14K4/MNP and LAPM. Numbers as follow:

0905 52536	Alien Node
0905 57822	We/ve Got A Hot One Here
0905 58030	Throbnet Node
0905 56610	So You Like Spam Node
0905 57112	Dirty Lines Node
0905 56335	Amiga Node
0905 58042	Troffers Node
0905 754151	For All Software Troffers
0905 754127	Live and Kicking Dawn Raid

Maximum	0905 429595	
Mbbs Leconfield	0964 550745	V21/22/22b/23
Mbbs Mitcham llc	081-648 0018	V21/23
Medway	0634 280031	V21/22/22b
Mektronic Consultants	061-773 7739	V21/22/22b/23
Merkinstead	061-434 7059	V21/22/22b/23
Merlin	0443 834179	V21/22/22b/23
MetNet Train System	0482 473871/442251/449028	V22bis/V23 and faster
Micro Live Bb	081-567 6500	V21
Micro Update	081-877 1529	V21/22/22b/23
Microdeal	0726 65422	V21/22/22b/23
Microlog	0422 71921	V21/22/22b/23
Midget Gem	0748 834836	V21/23
Mind Boggles	0362 762868	V21/22/22b/23
Miridian	0273 588924	up to 2400.
Mininet 3	0642 672813	V21/22/22b/23
Miracom Support	0473 232540	Hst
Mirage	061-652 1242	V21/22/22b/23
Mirror II	0628 810889	V21/22/22b/23
Mirrorworld/quest 1	0883 844044	V23
Mission Impossible	0602 654329	Hst
Mk Board	0908 671289	V21/22/22b/23
Mkbbs	0908 504556	V22/22b
Monkey Tree	0952 677002	V21/22/23
Monusci	0293 545665	V21/22/22b/23
Motor Exchange	0484 435314	V21/22/22b
Movie BBS	0703 650037	V21/V22/V22bis
Multi-bbs	041-649 9043	V21/22/22b/23
Murdoch's Hangout	021-711 2620	V22/22b
Murky Caverns	081-426 9386	Hst
Mwcfe	0926 421844	V22bis
My Little Phoney	0793 849044	V21/V22/V22bis/V32/HST

N

Network 23	0274 482021	V23v
New Wave	061-839 5381	V21/V23/V32/HST.
Nicc Mid-west	0341 250377	V21/22/23
Night Hawk	0329 45384	300/1200/2400
Nite Life	071-976 6807	V21/22/22b
No Escort Required	081-200 3817	Hst
No.1 BBS	081-958 1689	V21/22/22b
Noah BBS	0272 572322	300-2400
Norpac	0434 608324	V21/22/22b
North Wales BBS	0978 88372	V21/22/22b
North Yorks Q	0423 868065	V22/22b
Northern Lights	0768 773685	V22/22b
Norwich Onion BBS	0603 423305	V21/22/22b/23
Nova	0455 553371	V21/22/22b

O

Odd-ball	081-679 2583	V21/22/22b/23
Odyssey	0482 870919.On The Beach 027	
600996	V21/V22/V22bis/HST	
Open Access	081-427 3974	
Optix	0482 872294	V21/22/22b/23
Organic Garden	081-464 3305	V21/22/22b/23
Out Of The Blue	081-668 7667	V21/22/23
Owl Service	0532 605876	V21/23

P

P'S & Q'S	051-236 3105	V21/22/22b/23
Pacific Lightning	0732 845338	V22/22b
Packet BBS	081-547 1479	V21/22/2
Packet Place	0484 435620	V21/22/22b
Palm Beach	0303 265979	V21/22/22b/23
The Paradise Club	V21/V22/ V22bis/V23 081-871 4300	
Pazaz Viewdata	0383 620259	V23v
PC Access	071-608 0081	V21/22/22b/23
PC-Amiga Link	04023 84914	up to 2400
PC Forum	0322 335348	V21/22/22b/23
PC Link	0375 674046	V21/V22/V22bis/V32
PC Serve Shop	081-864 2633	V21/22/22b/23
PC Serve Softnet	0895 420164	V21/22/22b/23
PC Serve Storehouse	0494 728094	V21/22/22b/23
PC-VAX Opus	081-800-3549	V21/22/22b/23
Pcamiga BBS	0602 735119	V22/22b
Peacenet West	0895 448998	V23v
Pecan Software	0272 248076	V21/22/22b
Pegasus	0905 755085	V21/V22/V22bis/HST 14.4/V42/ V42bis.
Penguin	0943 830820	V21/22/22b/23
Phacs South West UK	0752 361291	V21/V22/V23/V22bis
Phantom	0226 340425	V21v/22v/23
Phoenix	0249 817704	Hst
Piston Popper	0424 853361	
Plug-ole	021-472 0256	V21/22/22b/23
Plus And Minus	0559 322766	V21/22/22b/23
Poacher	0476 62450	V21/22/22b/23
Polynet Bb	071-580 1690	V21/22/22b/23
Pook BBS	0268 767365	V21/22/22b/23
Port Of Call	081-391 5779	V21/22/22b/23
Power Play Q	0698 423669	V21/22/22b/23
Power Tower	0533 880114	V21/22/22b/23
Prestonet	0772 612462	V23v
Project BBS	0384 401770	V21/22/22b/23
Prometheus	081-300 7177	V23v

SPOTLIGHT ON

THE OWL SERVICE BULLETIN BOARD

Leeds based bulletin board The Owl Service has recovered from a bolt of lightning which fried its modem.

For the time being The Owl Service is now back on-line with a limited service on 0532 522490 between 11pm and 9am which proves that some clouds have more than a silver lining.

Sysop and comms journalist Mal Arnold said: "There you are. Let that be a lesson not to shelter under a modem during a thunderstorm."

Proximity	0793 480028	V21/22/22b/23
Publishing Shop	091-261 5228	V21/22/22b/23
Purely Pc	0232 645942	V21/22/22b
Pyramid	071-239 0871	V21/22/22b
Pyroto Mountain	0895 59071	V21/22/22b

Q

Quantum	021 707 0681	V21/V22V22bis
Quasar	0846 693067	V21/22/22b

R

Random Access	0282 817379	V21/V22/V22bis/9600/HST/V32
Really Interesting	0582 414991	
Reflex BBS	0703 685527	V21/22/22b/23
Regency BBS	0542 33050	V21/22/23
Remote!pcw	0555 851887	V21/22/22b/23
Rivendell	0602 640488	V21/22/22b/23
Rm Tech. Support	0865 796431	V21/22/22b/23
Road Runner	061-483 4105	V21/22/22b/23
Royalink UK	0962 66807	V21/22/22b

S

SAC BBS	0242 260685	V21/22/23/22b
Sas BBS	0742 325232	V21/22/22b/23
Satellite Southwest	0392 53116	V21/22/22b/23
Scabbs	0909 479080	up to 2400
Scary Monster	0734 320297	Hst
The Schizophrenic Wolf	0772 456526	V21/V22/V22bis
Scot Air	0505 36036	V21/22/22b/23
Scothelp-St	031-343 6368	V21/22/22b/23
Scottish Opus	041-880 7863	V21/22/22b/23
Scottish Wildcat	0674 671141	V21/22/22b/23
SCS One	0444 236002	V22b
Sector	0772 454328	V23v
Semaj Qbbs	0303 862415	V22/22b
Sentinel Bb	0628 781429	V21/22/22b/23
SES Databoard	0622 630240	V21/V22/V22bis
Shades	0342 810905	V23
Shadowfax	0252 528146	V21/22/23
Shadowland	081-897 0488	V21/23
Shasby's Lair	0772 561066	Hst
Sherwood Forest	0602 397113	V21/22/22b/23
Short Circuit	0273 462967	Hst
Sid (acorn Service)	0223 243642	V23v
Sigma Four	081 330 7738	
Signal Box	081-337 6583	V21/22/22b/23
Sin Bin	0532 661536	V23
Sirius	081-542 3772	V21/22/22b/23
Sirius II	0494 778425	V21/22/22b
Six And Five Eights	0273 688888	V22/V22bis
Skull	0379 740972	V22/V22bis
Skull's Tower	081-943 1194	V21/22/22b/23
Sky-line	0603 742273	V21/23/23v
Skyline 1	0234 741691	Hst
Sleepy Town	0234 267231	V21/V22/ V22bis.
Softmatic BBS	0733 322540	V21/22/22
Software Madness	0895 72021	300 to 2400
Software Source	0892 661149	V22/22b
Sorcerer's Dungeon	0636 815705	
Sounds Of Mercia	0203 682896	V21/22/22b
South Lincs BBS	0780 63954	
Sparx	0793 480287	V21/22/22b/23
Sphere BBS	0294 221350	V21/22/23/22b
Spud's Xanadu	0203 686819	V21/V22, V23, V23b
Sputnik Spitfire	0501 31754	V21/22/22b
St London BBS	081-443 2432	V21/23
Stabb	0793 855176	V21/22/23/22b
Staines BBS	0784 465794	V21/22/22b/23
Starbase One	071-733 3992	V21/22/22b/23
Steve and Jackie	0703 650037	V21/V22/V22b/V23
Strange Brew!	081-665 5038	V22/22b
Stun User Network	061-429 9803	V21/22/22b/23
Style QBBS	0442 381164	300–14.4K (HST)
Summer Wine	0484 653234	Hst
Sunburn Inc.	021-449 5269	V21/23
Superbase User Group BBS	081 339 0096	300-14.4K/HST/V32
Super Ops BBS	0782 284081	V21/22/22b
System-c-v	0403 50607	Hst
System X	0904 612934	2400

T

TABBS	0533 517615	V21/22/23
Tabbs	0225 743797	V21/22/22b/23
Taecomm	0994 6709	V21/23
Taff's Retreat	0834 4562	V21/22/22b/23
Tardis	0772 27236	V21
Tasque	0355 222664	Hst
Tasug Opus	0904 760129	V21/22/22b/23
Tavern	081-445 6514	V21/22/22b/23
Tech net BBS	0633 216500	Tbbs-rovoreed
081-542 9767	V21/22/22b/23	
Tequila Sunset	0703 867786	V23v
Terminal Net 5	0402 456135	V21/22/22b/23
Terminal-net	081-423 5262	V21/22/22b/23
Tharr BBS	0234 261804	V22/22b
Third Wave	071-585 3163	V21/23
Three Kings	0354 56267	V21/22/22b
Track 83	0953 851351	V21/22/22b/23
Transylvania	0274 621668	
Tranz-com BBS	081-952 6273	V21/23
Trinity I	0392 410210	V21/22/22b/23
Trinity II	0367 22764	V21/22/22b/23
Tug II	0905 775191	V21/22/22b/23
Twilight Zone	081-788 0884	V21/22/22b/23
Twilight Zone II	071-608 1485	Hst

U

UK Healthlink	0942 722984	V21/22/22b/23
Unauthorised Access UK	0636 708063	1200/2400
Unisys Etoi BBS	081-453 5739	V21/22/22b/23
Unit One	0285 713688	V21/22/22b

V

VITAS	021-749 5860	V21/23
Valente'S BBS	071-978 2078	Hst
Vector System	0329 45824	Hst
Viking East Anglia	0255 503048	V23v
Village	081-464 2516	V21/22/22b/23
Village Fayre	081-841 5971	V23
Voyager BBS	061-725 9580	V21/22/22b/23

W

Wally's Board	0506 440582	V21/V22/V22bis/V23
West Norfolk	0553 761290	1200/2400
White Lightning	0635 37259	V22/22b
Whitehall Pent	071-930 3903	V21/22/22b/23
Wild Imaginings	091-263 4303	V21/22/22b/23
Winchester Remote	0962 69322	V21/22/22b/23
Wizard	0703 702427	
Wolverhampton ROS	0902 745337	V21/22/22b/23
Womble Base	081-979 9606	V23
Woodgreen BBS	081-889 5624	V21/23

Y

Yugo BBS	0734 753648	V21/22/22b/23

Z

Zeus BBS	0487 710487	V21/22

EXPRESS DISCLAIMER

Inclusion in this listing does not mean that Express endorses or recommends any individual library.

THE PD COLUMN

This week Frank O'Connor tries out the best Amiga games in the Public Domain; reviews some games for arcado-philes and delves into the 8-bit emulator market

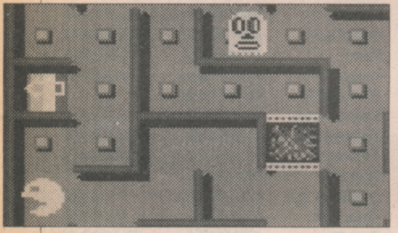
AMIGA FAVOURITES

Amiga games are a bit thick on the ground this week and so here's a rundown of the best of the bunch.

Pacman 87 is, believe it or not, an Amiga version of the ancient Namco all time classic *Pacman*. It features the antics of a voracious yellow beach ball who's only ambition in life is to eat coloured dots.

This particular incarnation of *Pacman* tries hard to improve on the theme by adding lots of different mazes and bonuses. The game comes courtesy of Byteback PD and is in itself, a very enjoyable romp. It takes the main idea and turns it around a little, giving the player a fair bit of variety.

The ghosts you have to avoid are fairly clever and as a result, the game is rather difficult. The graphics aren't up to much, but they're more than adequate for this kind of game. Sound is decent, with warbling and cutesy sound effects. You can't really go wrong with the basic idea of *Pacman* and so it comes off as being a polished and playable little game and easily one of the better *Pacman* clones on the PD scene.



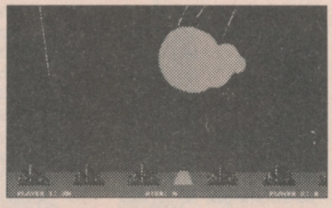
• **Pacman 87 – *an Amiga version of the ancient Namco classic.***

ARCADIAN PLEASURES

Arcade buffs might prefer to get hold of a disk from Start This disk contains some truly brilliant little games for the Amiga, including a neato *Missile Command* clone, a spiffy *Qix* clone and a radically superb *Galaxians* clone.

Starting with the *Galaxians* game, simply because it has the most awful name. It's called *Girl Actions* (get the pun?) and takes the theme of swooping, diving space critters to new heights. Well, actually it doesn't, it simply copies the original game exactly. No bad thing, *Galaxians* is a bit of a laugh and one of the best shoot-'em-ups of all time.

Another superior shoot-'em-up is *Missile Command*. This game when released in the arcades, introduced the novelty of the track-ball. The object of the game is to blast incoming missiles out of the sky. You follow the trails the missiles leave using the cursor. Firing causes a biggish explosion, which will hopefully takes out the missile you were aiming for.



• **Missile Command – *a superior shoot-'em-up which introduced the track-ball, and a faithful rendition of the original arcade game.***

The point of this is to defend three cities at the bottom of the screen. If all three are struck by incoming enemy fire, then the game is lost. It's a fairly faithful copy and one fans of the original machine should seek out immediately.

Also on the disk is a neat *Qix* clone. *Qix* is a theme currently recurring in Ocean's conversion of Taito's *Volfied*. The PD version is called *Bally 2*. Good name for a game which is entirely identical to *Bally 1*.

Still, that isn't a problem, *Bally 2* is absolutely superb. It takes a brilliant idea, uses it well and hey presto a marvellous game worthy of anyone's attention. The idea is to fill a screen with colour, to do so, you have to box in areas with the trail your craft leaves behind. When you make a box, it fills with colour and you can move on to another area.

Trying to prevent your heroic antics are an assortment of meddlesome baddies. Don't worry about them too much, as frankly theyr'e a bit daft. You have to reach different target percentages, depending on what screen you happen to be on. 80 per cent is about the average target required and it isn't as easy to get as it sounds.

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1077: Clear. A very good, (but mind-bogglingly hard), game from PH Software.............£3.00
1083: Copper Writer/Screen Designer. By Frank Tout. (For programmers only).............£3.00
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NO MORE WAITING! SUBSCRIBE TO THE AMIGA CODERS CLUB NOW!
If you would like to get hold of the Amiga Coders Club disks as soon as they are published, why not send £33.00 and ask to go on the A.C.C. mailing list now? We will send you each issue as soon as it is ready. (Applies to issue 14 onwards.) (If ordering from outside EEC countries, add an extra £6.00 for years postage)

PLEASE NOTE THAT ISSUES RELEASED PRIOR TO ACC 14 MUST BE PURCHASED SEPARATELY

MASTER VIRUS KILLER V2.2 IS HERE! It now recognises another 27 of the little buggers, including the virulent SHA! This excellent program is only £5.00

COMING VERY SOON... The full two disk version of Mike Simpson's A-Gene! No need to send your order to Australia anymore!... Watch this space

LOOK
THE FANTASTIC (1Mb) EIGHT OR FOUR CHANNEL MIDI COMPATIBLE OctaMED v1
Note that V3.11 of the public domain four channel med is also included in this excellent program and you can switch from 8 to 4 channels at will.

(£15.00 for non-European). The price includes return post and packing. Payment in pounds sterling only. If ordering from overseas, send a bankers order/Eurocheque etc. (Credit card orders will not be accepted).

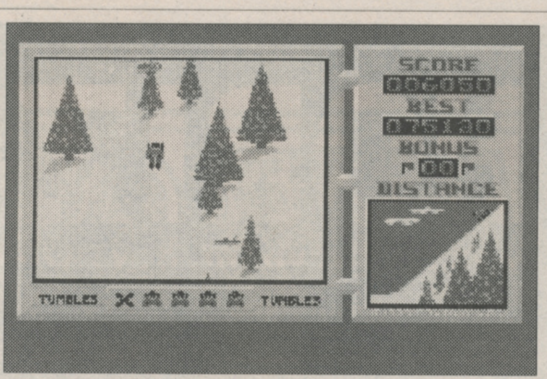
Into coding? - Want to learn? The Amiga Coders Club is for you! ACC 1-4 is the first four compressed issues of an excellent series for coders, even if you are new to the Amiga. If you want to learn Assembly, using DevPac, (or our own new ACC special assembler disk), this is the club for you! ACC 1-4 (compressed) £1.50. The Amiga Coders Club disks are packed with source, hints, tips, advice from many of the well known coders that are on the Amiga scene today. Issue numbers 5-14 are now available. Please note, (excluding the compressed introductory disk (ACC 1-4), and no. 12, the price for each issue of the ACC disks is only £3.00. ACC 12 is our birthday issue, it is a 2 disk set, and therefore the price is £6.00. Amiga Coders Club Special! Here is a low priced assembler package for all you coders out there in Amigaland. (See the review in this months Amiga Format) £5.00.

OUT ON THE PISTE

Amiganuts has released a lovely little game called *Downhill Skier*. It's very reminiscent of the ancient Spectrum game, *Horace Goes Skiing*. This is no bad thing, the graphics have been tarted up and the sound has been given a shot in the arm too.

The aim of the game is to traverse a massive ski slope, avoiding trees and leaping obstacles. Flags appear at various intervals and can be collected for bonus points. The action is intense and the pace of the game is exhilarating.

It can be repetitive but is so much fun, you probably won't notice. It looks like the Amiga PD games scene is finally going places and will soon be giving budget games a run for their money.



• Downhill Skier ***is reminiscent of the ancient Spectrum game,*** **Horace Goes Skiing** ***with tarted up graphics and sound. Intense action makes for an exhilarating game from the growing Amiga PD scene.***

8-BIT EMULATION

ST owners who miss the halcyon days of the Atari XL series should fret no longer. If there's any computer you fancy emulating on your ST, then you can with a little hunting around, get hold of an emulation package covering almost any eight-bit machine you care to mention.

The XL emulator is particularly good. Entirely software based, you can boot it up and run it almost immediately. The program emulates the 8-bit 6502 processor and includes the ancient and almost unworkable Atari BASIC.

The program is extraordinarily professional, with an options screen that allows you to select several different XL configurations. You can choose from the 32K, 64K and 128K machines, including the updated XE system.

The machines were quite sophisticated for their time, with a then incredible 256 colour palette and rather groovy sound chip. Unfortunately, the high price point and poor marketing meant that they never really took off.

You can boot up your preferred system and proceed to enter old Atari listings or make up your own. If you want to run XL software, then the included converter program could be the answer to your prayers.

The converter turns 8-bit code into a form that the ST (with this emulator installed) can understand. The difficulties of loading this software are considerably reduced by the inclusion of a weird RAM disk option. Once you have the necessary cables and drives set up, you can transfer the programs you need to use in one sitting. The computer then allocates RAM space as a kind of fake drive. In this way, the emulator is fooled into thinking that the machine is hooked up to an XL floppy drive and reads the RAM just like a disk.

The ST user will appreciate the difference in speed between the two systems. The XL had a notoriously slow drive, with bigger titles taking as long as ten minutes to load from disk!

Similar emulators are available, covering the BBC Micro, the Apple II, the Commodore 64 and most importantly, the ZX81. The 64 emulator is probably the worst of the lot. The main problem is it's very slow. The archaic BASIC and lack of features make using it an absolute nightmare. It also seems unlikely that there is any practical way of loading 64 software into the emulator anyway.

The Beeb emulator features superb BASIC and is easy to use, but the ZX81 emulator is the one you have to have. A keyboard map is supplied in the software and just as well, finding commands takes a multi-dextrous octopus all day, never mind us mere mortals. All of these packages can be picked up from Goodman PDL in Staffordshire. ■

BUT WHERE DO I GET ALL THIS STUFF?

Goodman PDL,
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1129: DOWNHILL SKIER. Remember good old Horace? (See Frank's review above!)......£2.00
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Many new programs have arrived, but there is no space to list them all!

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Who's doing what, with what, with whom, how, why and where...

THE PLACES TO BE . . .

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At the Science Museum, London. Info: 071-938 8080.

GeoCon '91 Sun 11 – Tue 13 August
Info: 010 32 03 234 3180.

Human Gene Mapping International Workshop Mon 19 – Thu 22 August
At the New Connaught Rooms, London. Info: 071-269 3616.

Computer Animation Competition and Exhibition Wed 21 – Wed 28 August
At the Amiga Centre Scotland. Info: 031 557 4242.

PLASA Light & Sound Show Sun 8 – Wed 11 Sept
At Olympia 2, London. Info: 071-370 8174.

Leeds Computer Extravaganza Fri 13 – Sun 15 Sept
At the New Exhibition Centre, Leeds University. Info: 0532 677 657.

CP/M & MSDOS User's Group Sat 14 Sept
The third annual sale of second-hand computers, peripherals and software, held at the Spring Lodge Community Centre in Witham. Stands are available at £10 for private individuals, or £20 for companies. Info: 0376 517496.

Business Computing '91 Tue 17 – Fri 20 Sept
At the Earls Court Exhibition Centre, London. Info: 071-486 1951.

International Police Exhibition and Conference '91 Tue 17 – Thu 19 Sept
At London's Barbican Exhibition Centre. Info: 081-995 7700.

The Works of Charles Babbage Thu 19 Sept
Lecture at the King Edward VI College, Totnes at 14.15. Info: 0803 863821.

Effective Management of Information Technology Security Conference Mon 7 – Tue 8 Oct
Forte Crest Regents Park Hotel, London. Info: 071-587 1117.

Computers Count Tue 8 – Thu 10 Oct
An exhibition at Totnes Civic Hall. Info: 0803 863821.

Business Communications Awards Thu 10 October
At the Savoy Hotel. Info: 0800 800 847.

Charles Babbage's Impact on Modern Computing Wed 23 Oct
At the Science Museum, London at 17.30. Info: 071-9388196.

Image Processing '91 Tue 29 – Thu 31 Oct
At Birmingham NEC. Info: 081-868 4466.

System Builder Wed 30 – Thu 31 Oct
At Sandown Exhibition Centre, Esher, Surrey. Info: 0822 614671.

Computer Graphics '91 Tue 5 – Thu 7 Nov
At the Alexandra Place, London. Info: 081-868 9933.

Desktop Cad '91 Tue 5 – Thu 7 Nov
As above.

Open Systems 91 Wed 6 – Fri 8 Nov
At the Olympia, London. Info: 0784 472200. ■

The Insider...

Your weekly, concise guide to the computer industry compiled by our man with his ear to the boardroom (and bedroom) door

The Insider is miffed this week. Since this column began various Famous Industry Figures have seemingly grouped together to form a support group to protect their fragile egos against free and open press speculation. Self-styled as FIFAG (Famous Industry Figures Against Gossip) with members taking on the rather masonic titles of FIFs. This cannot be allowed to continue. If we had any constitutional rights then The Insider is sure that such an organisation would contravene them. By the way, if you have any well researched information relating to FIFs you should send it to: The Insider, The Event Horizon, *New Computer Express*, 30 Monmouth St, Bath BA1 2BW. Anonymity is assured, as is a fiver for anything used.

NOT SO BON SOIR

Paris is lovely in July. There's romance in the air and the chance to rebuild relationships which might well have been reaching breaking point. That's the theory anyway. Unhappily for certain managing directors of certain computer dealers (insultingly called 'box shifters' in the trade) theory and practice don't always reach a harmonious climax. Especially when the second half of the fraught relationship – the wife – is not in Paris at all. Now remember business people, attention to detail is all. If you say that you are going to Paris alone, make sure that the switchboard knows it is not to tell callers that your secretary is with you!

A PYHRRIC VICTORY

It comes to something when an *Express* hack has to sit and listen to another of his colleagues being abused over the phone by a certain maker of drives who objected to a Shoot from the Lip column in *Express'* opening pages. Threatening to pull advertising is all well and good, and Microstyle has every right to do so. However, this strong arm tactic does have a nasty tendency to boomerang and forearm smash the instigator in the face when the magazine in question (a sister magazine of *Express*) refuses to take the advertising in the first place.

YOU SHAN'T GO TO THE BALL

Is there any truth in the rumours that the recent split between Atari and ex-marketing manager Peter Staddon might have had something to do with the forthcoming Computer Entertainments Show? Mr Staddon apparently felt that attendance would be a good idea. The Atari powers-that-be thought otherwise. Well, it's a relief to know that the resignation had absolutely nothing to do with a personality clash between Staddon and Atari's Mr Gleadow.

Golden Moments

A look back into the history of computing with *Express*. If it happened we reported it first.

ONE YEAR AGO

- Something known as Eye-Gard was released for the PC. Not for users paranoid about cathode rays, but rather for those paranoid about others using their computer, the device could detect the presence of anyone entering the room. Once it had done so, an animated eye on the PC screen opened and actively followed the intruder's movements. Noises could also be added, just to show them you really meant business.

- With the introduction of the 386 and 386SX chips in 1989, the price of 286-based PCs dropped dramatically, reaching the sub-£1,000 this time last year. Nowadays, because of the new 486 machines, you can pick up a 386SX machine for about £1,000.

TWO YEARS AGO

- Following the new Copyright law and doubts about the legality of software copying devices, it was alleged that one of Power Computing's programs had been ripped off and was being sold by Evesham Micros. The program in question was *Blitz*, a copying program.

- Bad news for Apple, with a San Franciscan judge refusing to accept that Microsoft and Hewlett Packard had ripped off Apple's WIMP look and feel. The case continues to this day...

- Nintendo, that lovably litigious company, had them all worried. It was rumoured that the firm was intent on buying up the rights to all the big arcade games, with the intention of releasing them on its own consoles and preventing their release on computer formats, supposedly to persuade people to buy Nintendo consoles.

With arcade game producers Tengen and Sega opposed to Nintendo's plans, the computer games market has yet to dry up, although the recent rise in the popularity of consoles has hardly been good for the health of the home computer industry.

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Due to further expansion of our Sheffield offices, a number of vacancies have now arisen.

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If you have the ability to manage a game from conception through to completion, then this vacancy could suit you. Ideally you will have an understanding of programming, a sound knowledge of game structure and the ability to communicate with individuals and teams of programmers. Salary and benefits will be commensurate to experience. A current full driving licence is essential. Help will be given should the successful applicant need to re-locate.

PROGRAMMERS / ARTISTS

We require creative programmers and artists to work on 6502, Z80, 68000 and 8086 platforms. The variety of work ranges from Gameboy through to CD based projects . A proven track record is helpful but not essential as all applicants will be judged on ability. Salary and benefits will be commensurate to experience. Help will be given should the successful applicants need to relocate.

FREELANCE

In addition to our internal programming teams we are always looking to take on any freelance projects from external teams who have a proven track record. Demos and storyboards are always assessed.

All enquiries will be treated in the strictest confidence. Contact James North-Hearn or Sean Kelly on 0742 753423 or write to Gremlin Graphics, Carver House, 2-4 Carver Street, Sheffield, S1 4FS.

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PC SURVIVAL KIT

PRODUCT: PC Crash Course and Survival Guide and PC Crash Course II
COMPATIBILITY: IBM PC, XT, AT and PS/2 computers
FROM: PC Productions Ltd
CONTACT: 0453 755200

If the thought of DOS prompts and 386 processors give you a headache, then *PC Crash Course* could be the remedy. Dave Golder investigates a possible cure for PC-phobics

Let's face facts. Most computer illiterate people would find a telephone directory more interesting reading than the majority of PC manuals. But as more and more people find they are being forced to come into contact with the dreaded modern technology at work, it's very refreshing to discover a pair of books that make learning about how to use a PC not just easy, but almost... well, fun!

The PC Crash Course and Survival Guide and *PC Crash Course II* by Peter Harrison are the perfect introduction to the PC for the complete beginner. They also make useful reading for people who have been using PCs for some time, as they cover an incredibly wide range of topics – everything from what the components of the system are called and how to stick in a disk, to quite complex stuff such as creating batch files – in an extremely clear, concise and, above all, interesting way.

ZEN AND THE ART OF PC MAINTENANCE

One of the main pleasures of the books is the way in which they casually demystify some apparently quite daunting concepts. Typical of this is a chapter in *The PC Crash Course and Survival Guide* entitled, 'How to sound like a techie even if you aren't one' which effortlessly explains about bits and bytes, the set up program, formatting and how a computer stores information, before encouraging you to get out your screwdriver and take a peek inside the system unit!

Peter Harrison is also keen to let beginners into the secret that many computer bores actually do not know much more about PCs than the average newcomer. He demonstrates that all the long words and computer terminology are just a seemingly incomprehensible and complex-looking, but very thin crust covering to some quite straightforward operations and functions.

INITIATION FOR THE NOVICE

The PC Crash Course and Survival Guide is for the complete novice and aims to teach "the least you must know to buy and use IBM PC, XT, AT and PS/2 computers, plus all compatibles". To a large extent it achieves this, though it is vague on some rather major points, such as using a mouse (which is actually covered in *PC Crash Course II*) and buying and running software. The first time it actually lets you know how to get a program up and running is in the appendices, which is rather odd, as that is what most newcomers will be most interested in doing (so they can play a flight sim, or something else a bit more exciting than renaming a file).

One of the main pleasures of the books is the way in which they casually demystify some apparently quite daunting concepts

However, as an introductory guide to finding your way around DOS *The PC Crash Course and Survival Guide* is faultless, and the simple exercises at the end of each chapter are essential for putting the knowledge learnt to practical use. The guide also comes with a free disk which demonstrates some PC programs but falls far short of the quality of the book (see panel below).

PC Crash Course II takes up where the first left off, explaining further, more complex DOS functions, dealing with common problems such as memory expansion, keyboard malfunctions and viruses and going into more depth about peripherals and applications.

Aside from some appalling cartoons, its main failing is that it retreads a lot of ground already covered in the first book without adding much more of interest.

PC Productions Ltd
proudly presents

PC Crash Course

• Learning about PCs does not have to be a dull experience as the PC Crash Course books prove.

However, the chapter entitled 'Batch Files' is nothing short of superb; by the end you could almost believe you were programming, when a short while ago you hadn't a clue where to plug your mouse in.

NEVER JUDGE A BOOK BY ITS COVER

Both books are very well designed and laid out, though its a shame they never quite live up to the promise of their excellent covers. They make good use of spot colour to highlight commands and screen displays, which makes the exercises especially easy to follow. The diagrams are clear, but a few photographic illustrations would have been useful, especially of chips and motherboards, which do not come across well as line drawings. *PC Crash Course II* is chock full of really useful at-a-glance tables of everything from clock speeds to the ASCII character set.

The PC Crash Courses are highly recommended for anyone faced with a PC for the first time. Whether used as a way of getting over technophobia, or as a first step into more serious computing, they are ideal. ■

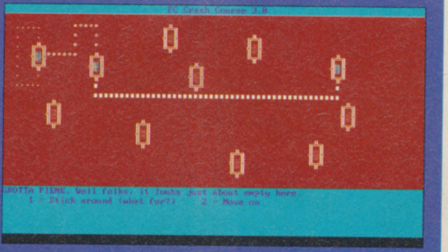
WHAT'S ALL DISK, THEN?

The PC Crash Course and Survival Guide comes with a disk which is used in conjunction with a number of exercises. Unfortunately, it's an extremely dull affair with programs that you'd feel cheated by if you had purchased them in the Public Domain and falls far short of the high standards set in the books.

The programs include an adventure game that looks like it was written for the ZX-81, a series of pointless speed typing trials and a bulletin board simulator that does little more than make a very bad attempt at sounding like a phone dialling. None of them seems to offer much in the way of educational value.

Instead the disk's main value is as a testing ground for trying out the file copying, creating and deleting exercises in the book. In fact, do yourself a favour and try out the '`DEL A:*.*`' exercise on it, then use the resulting empty disk for making a back-up of something really good, like *Lemmings*.

It's a bit of shame and a real wasted opportunity, as anyone new to the PC might be very wary about the machine, and some really whizzy programs on the disk might have made the whole learning process seem a lot less of a chore.



```
PC Crash Course 3.0
GROTTA PIENE. Well folks, it looks just about empty here.
    1 = Stick around (what for?)      2 = Move on
```

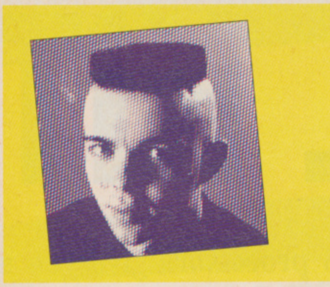
• The disk supplied with* The PC Crash Course and Survival Guide *is a real let-down, featuring some appallingly awful programs. Best to erase it and put something good on it.

ARE THEY WORTH READING?

FOR
- ▲ Very clearly and simply written but packed with information without being patronising
- ▲ Handy summaries at the end of chapters and glossaries of terms
- ▲ Good use of spot colour to make command lines and things which you would see on screen show up very clearly
- ▲ Useful exercises which help develop the themes of each chapter

AGAINST
- ▼ The disk supplied with *The PC Crash Course and Survival Guide* is very poor
- ▼ Both books would benefit from more photographs
- ▼ *PC Crash Course II* retreads too much of the ground covered in the first book

COST
The PC Crash Course and Survival Guide £17.95
PC Crash Course II £15.95



Games Week

Stuart 'Scorer' Campbell sticks up his points card and gives those games a real rating – from the atrocious unplayable to the amazingly adventurous

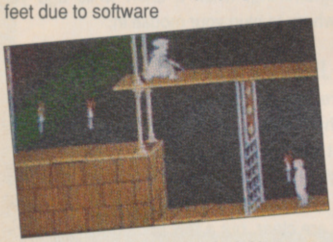
STAR RATINGS

★★★★★ = Gerry Sadowitz
★★★★ = Denis Leary
★★★ = Bruce Morton
★★ = Jimmy Tarbuck
★ = Andrew 'Dice' Clay

A NEW SAM GAME!

If they all jumped up and down with joy at the same time, there probably still wouldn't be enough Sam Coupé owners to jolt the skin off a rice pudding, but those there are will doubtless be ecstatic to discover that Broderbund's wonderful ***Prince Of Persia*** is mere moments away from release on their machine.

The almost-completed version seen looks extremely spiffy and it might just breathe a little bit of life into the Sam market, which is currently dying on its feet due to software starvation. If there's any justice at all in the world, this game will sell enough to make some other software houses bring out the odd release or two, so if you're a Sam owner you know what to do.



• Making 8 bits look like 16, it's Sam Prince Of Persia.

THREE-MINUTE HERO

Following on from the recent news of their egg-like hero ***Dizzy's*** huge success on the 8-bits (100,000 sales of ***Treasure Island Dizzy*** on Spectrum alone), Code Masters has announced plans for a 16-bit ***Dizzy*** compilation.

The five-game set will include rewrites of several of the hard-boiled hero's 8-bit triumphs, along with a brand new Diz epic as yet awaiting a title. The pack should hit the streets in November at around £19.95, clearing the way for an attempt at the Christmas No 1 slot.

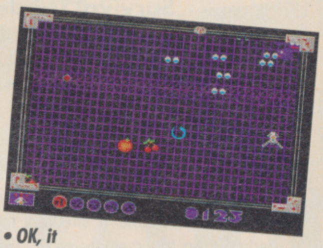
'OH NO'

Please, tell me it's not true. It can't be, can it? Tell me it was all just a horrible dream, that I'm going to wake up any minute now and laugh it off, albeit in a slightly nervous and unsettled manner. I mean, surely Alternative Software hasn't really just acquired the licence to produce an *Allo Allo* computer game, for release on all major formats around September this year? It doesn't bear thinking about, does it? No, I'm sure it's all just a malicious rumour, put around by some mad scientist or someone like that. It must be. I hope...

HERE IT COMES AGAIN

There are releases. Then there are re-releases. Then there are half-arsed attempts at squeezing more cash out of punters smart enough not to buy manky old rubbish the first time out, but not quite smart enough to resist a 'bargain' at the second time of asking. You need to find out which is which. Luckily, I'm just the chap who can tell you...
This week: SHOOT-'EM-UPS

SUPER GRID RUNNER • Action 16 • Amiga and ST • £7.99
This Jeff Minter game follows much the same path as all other Jeff Minter games – loads of speed, loads of zapping, loads of camels and loads of Pink Floyd logos. Unsurprisingly enough, it's a sequel to his 10-year-old 8-bit Centipede-style blaster, and takes a very similar format, but it's extremely slickly done, with beau-



• OK, it doesn't look like much, but just you play it...

TOP 10
EIGHT-BIT BUDGET

THIS WEEK	LAST WEEK	TITLE	PUBLISHER	MACHINE
1	1	*Bubble Bobble*	Hit Squad	SP CO AM OT
2	17	*Untouchables*	Hit Squad	SP CO AM
3	5	*Magic Land Dizzy*	Code Masters	SP CO AM
4	11	*Quattro Coin Ops*	Code Masters	SP CO AM
5	NE	*Renegade 3*	Hit Squad	SP CO AM
6	3	*Dragon Ninja*	Hit Squad	SP CO AM
7	8	*Double Dragon*	Mastertronic	SP CO AM OT
8	7	*Multimixx 1 Golf*	Kixx	SP CO AM
9	13	*Paperboy*	Encore	SP CO AM OT
10	2	*Professional Footballer*	D & H Games	SP CO AM

ST = Atari ST AG = Commodore Amiga PC = IBM PC or compatible SP = Spectrum CO = Commodore 64 AM = Amstrad OT = Other.
Chart compiled by Gallup. © European Leisure Software Publishers Assoc.

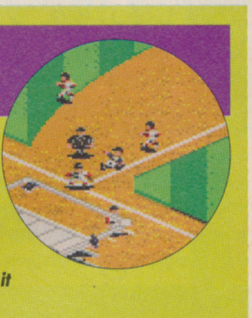
RBI TWO BASEBALL

Domark • Amiga • £29.99 • ★★★

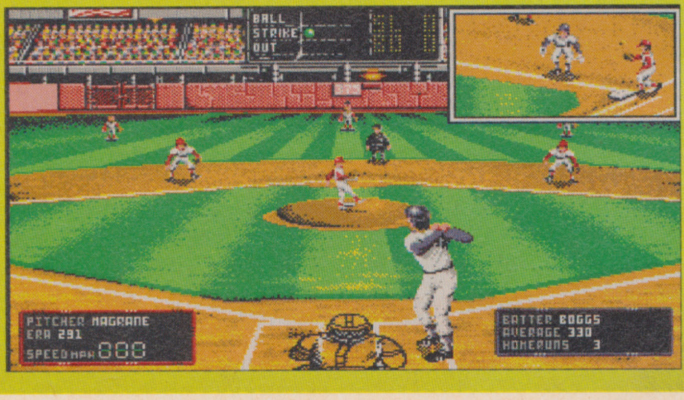
'Hold on', I hear you cry, 'RBI Two? What happened to RBI One, then?' Well, it was released yonks ago on the Nintendo, that's what (and bizarrely, RBI Three is coming soon on the Sega), but it wasn't until the sequel was out that someone thought of bringing it to the Amiga.

It's a baseball game (so no surprises there) in the mould of the veteran classic *Hardball*, but smartened up a bit with the addition of sampled speech, tons of background info, an in-stadium scoreboard with dramatic animated displays for just about every ocurrence in the game, and lots of other nice presentation tweaks. Which would all be to no avail if the game was a duffer, but luckily it isn't.

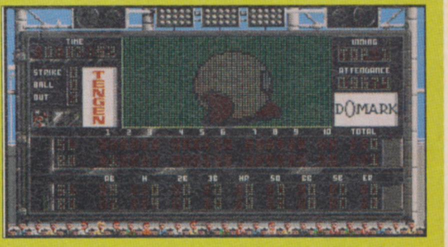
Mind you, it's not exactly a revolutionary success either. It uses much the same style and control system as every baseball game before it, relying more or less solely on timing to make the difference between a strike and a home run. Fielding is also, as usual, a complete pain in the bum, and you're likely to spend quite a while watching the opposition clocking up the runs while your players play 'catch' with each other until you get the hang of it. Still, these gripes disappear with a bit of practice (fielding, in particular, becomes so second-nature you wonder why all baseball games don't do it this way), and what you're left with is a beautifully-presented, if slightly unremarkable sports sim that would be a perfectly reasonable buy if it wasn't for the marginally silly price tag. £30 is just too much for an essentially simple game like this (even if you do get a 'free' baseball cap in the package), and unless Domark bring it down to a more normal level, I can't say that this is very good value for your money at all.



•When you hit the ball, the action switches to an overhead view, which scrolls around depending on the ball's flightpath. The ball actually leaves a dust trail behind it which makes it easier to spot.



• This is the view you'll see most of, the traditional 'behind-the-batter' shot. The inset screen in the top corner shows one of your batters stealing a head start before the next hit.



• This dejected-looking character is the ball, and it performs different animated skits depending on the shot played. Here all your batters are out and the ball trudges away depressed, about to be butted off-screen by the words 'All Out'.

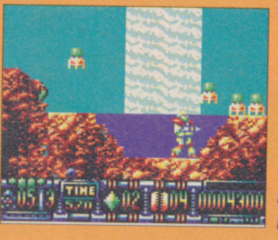
TURRICAN 2 Rainbow Arts • Amstrad • £9.99 cass, £14.99 disk•

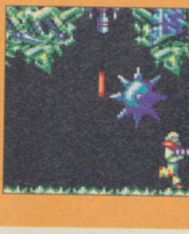
This game was released on the 16-bits quite some time ago to considerable critical acclaim, though there were several people who voiced complaints about its similarity to the first *Turrican* (well, there was me, anyway).

Now Rainbow Arts has finally finished cramming all the 1500-odd screens of platform blasting action into the Amstrad, and the results are pretty stunning.

The graphics would defy the belief of anyone who was around in the earlier days of the Amstrad, being packed with colour without any loss of detail or blockiness (indeed, they're not that far short off the 16-bit versions), and the sound is solid and jarring throughout, but it's the playability that really grabs. The vast levels are packed with things to do, aliens to massacre and secret bonuses to discover, and when you get deeper into the game it suddenly changes into an *R-Type*-style shoot-'em-up, knocking out the old moan that *Turrican* was just too samey.

Turrican 2 is a game that seems more at home on the 8-bit machine than it ever did on the Amiga and ST, and while it's probably not (as some Amstrad veterans are claiming) the best CPC game ever, it's almost certainly the best shoot-'em-up the old machine's likely to see. A magnificent technical achievement which is, for once, also a great game.


•Turrican dices with death under a waterfall. Well, it's dangerous if you're metal.



HATSTAND CORNER

Rainbird's epic of Arctic exploration and strategic manoeuvrings *Midwinter* was a major hit in Britain and the US a year or so ago, but some people in the industry have expressed a degree of surprise that it wasn't more successful in Europe, where this kind of mind-stretching monster of character interaction and endless traipsing around usually goes down well.

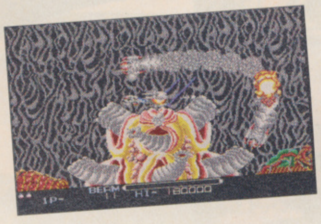
I can now reveal that the main reason was that the word 'Midwinter' sounds uncannily similar to an obscure Bavarian slang word for a homosexual prostitute, and Rainbird decided that in the interests of sensitivity it would be better to rename the game.

Unfortunately, while they tried to think of a new title, the European public got fed up waiting and the game eventually bombed disastrously.

tiful presentation and the kind of addictive blasting action that went out of fashion years ago. Needless to say, it's excellent fun, and the kind of game that you'll never tire of loading up when you fancy a bit of a pixel-slaughtering session. ★ ★ ★ ★

R-TYPE • The Hit Squad • All formats • £7.99 for 16-bits and £3.99 for 8-bits

The classic Irem coin-op was a conversion that many pundits said was completely impossible on the 8-bits, and asking a lot of even the Amiga and ST. Activision proved them all wrong with a set of conversions of variable quality, from the slightly simplified, but very playable ST version and the less-simplified-but-not-so-accurate Amiga one, to the absolutely amazing Spectrum copy. The Speccy was pushed beyond its limits, with huge graphics bursting with non-clashing colours and a game which replicated the arcade original perfectly in almost every way.

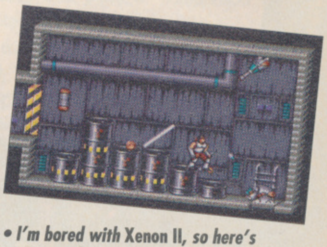

• A nasty big throbbing one in Amiga R-Type.

All versions (with the possible exception of the C64) are well worth getting, but any Spectrum owner who doesn't have this game in his software collection, doesn't have a software collection. ★ ★ ★ **(Speccy version ★ ★ ★ ★)**

XENON II • Mirror Image • Amiga and ST • £10.99

Ah. The King's New Clothes. Critics reached for new superlatives on seeing this eagerly-awaited follow-up to the game that launched the Bitmap Brothers on an unsuspecting world, but perhaps it may have served them all well to look beyond the fabulous music and the lovely graphics, where they'd have found a vertically-scrolling shoot-'em-up of the most bog-standard nature imaginable.

Waves of bog-standard aliens sloped down the bog-standard screen in bog-standard patterns, stopped only by the player's bog-standard ship, which could have any of a million impressive-looking extra weapons bolted on to it in a bold attempt to hide the complete lack of imaginative features in the bog-standard gameplay. By all means blow 11 quid on this if you want to impress your friends with your Amiga's processing power (the ST version doesn't have the glorious in-game music, and so half the game's appeal is lost immediately), but you'd still get more gameplay if you bought a copy of Vogue and a Bomb The Bass 12-inch with the money instead. ★ ★ ■


• I'm bored with Xenon II, *so here's a picture of a good game instead.'*

TOP 10
SIXTEEN-BIT BUDGET

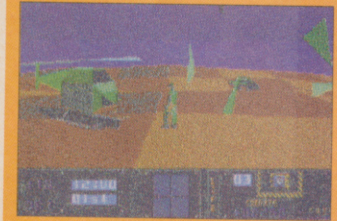
THIS WEEK	LAST WEEK	TITLE	PUBLISHER	MACHINE
1	6	***Full Contact***	Team 17	AG
2	7	***Pro Boxing***	Code Masters	ST AG
3	5	***Lombard RAC Rally***	Hit Squad	ST AG PC
4	1	***Xenon 2***	Mirror Image	ST AG PC
5	RE	***R-Type***	Hit Squad	ST AG
6	RE	***Defender of the crown***	Mirror Image	ST AG PC
7	3	***Fantasy World Dizzy***	Code Masters	ST AG
8	NE	***Classic 4***	Energize	ST AG
9	9	***Waterloo***	Mirror Image	ST AG PC
10	RE	***World Class Leaderboard***	Kixx	ST AG PC

ST = Atari ST AG = Commodore Amiga PC = IBM PC or compatible OT = Other

BEG, BORROW AND BURN

BEG

HUNTER • Activision

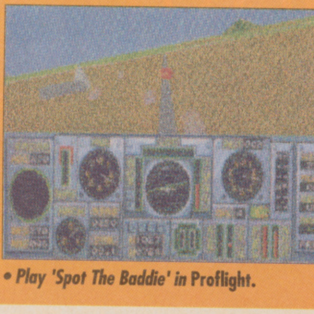

• Blimey, that's a big chopper, missus! (Sorry)

Coming from the people who brought you *Beast Busters*, you might expect this epic of 3D exploration and rabbit-shooting to be a bit average. Luckily though, it's utterly wonderful, and assuming that it's finally in the shops (it's been finished for ages), you really do want to be getting out there and buying it sharpish.

BORROW

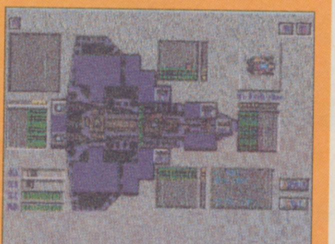
PROFLIGHT • Hi Soft

Coming from the people who brought you, um, lots of really great serious utility software, you might expect this flight sim to be a bit on the serious side. And it is. So serious, in fact, that there's NOTHING TO SHOOT IN IT AT ALL. If you fancy a pure flying experience it's the program for you, but game fans beware.


• Play 'Spot The Baddie' in Proflight.

BURN

RENEGADE LEGION INTERCEPTOR • SSI/US Gold


• Easily the most interesting picture in R.L.I.

Coming from the people who brought you *Eye Of The Beholder*, you might expect this wargame to be a bit tasty. Actually, it tastes like month-old milk in a heatwave. Loads of background detail and high-tech gubbins, but almost no game at all.

PP HAMMER
Demonware
Amiga, ST and C64

To use these Amiga level codes, you'll have to enter your name as 'HAMMER'. Catchy, aren't they?

1 - BEVDESRR
2 - UDICORAJ
3 - JCBBAJWI
4 - UAVBCHAI
5 - AWHATGBH
6 - TVDWVFTG
7 - ITTWJDSG
8 - TSJVSCGF
9 - ARCUFBUF
10 - TIWVGWDE
15 - ICFJJJBB
20 - SSVJECFV
25 - DFDGRTUB
30 - RVJBTFHH
35 - CICBGWVE
40 - RBHGJIGB
45 - BRAEEBIV
50 - JEFHRSDS

SURVIVAL IN THE PC JUNGLE

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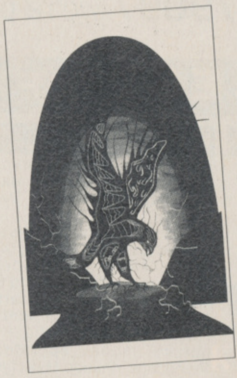
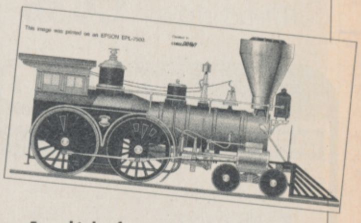
OUTPUT MADE PERFECT?

For serious desktop publishing output, a Postscript laser printer is now almost a necessity. Tim Howell puts the Epson EPL-7500 to the test see if it's got what it takes




This image was printed on an EPSON EPL-7500

• From birds of prey to trains, these are a few examples of what Epson's baby is capable of in Postscript mode.

PRODUCT: **Epson EPL-7500 Postscript laser printer**
COMPATIBILITY: **Amiga, Atari ST, PC, Macintosh**
SUPPLIER: **Epson**

Ordinary laser printers, while being more expensive than dot matrix models, make up for this by having excellent print quality. However, for serious desktop publishing, you really needs a laser printer that is Postscript compatible. Postscript is a language which turns documents into a description of what the final printed page should look like, which is then converted by the printer for improved output.

Epson's EPL-7500 is a Postscript compatible laser printer. As well as Postscript, the EPL-7500 is also capable of emulating the Hewlett Packard Laserjet II, which is very useful as not all applications output Postscript files.

Epson claims the machine is capable of printing A4-sized pages at a speed of six pages per minute (ppm) and we found nothing to dispute this. Its maximum resolution is 300 dots per inch (dpi). While these features are relatively common these days, the Postscript capability on its own is worth looking at.

SETTING UP

In comparison with many other laser printers the Epson is physically unusual. It is longer in width than length, and its paper tray sticks out at the front of the machine, instead of sitting on top and being part of the printer's natural footprint.

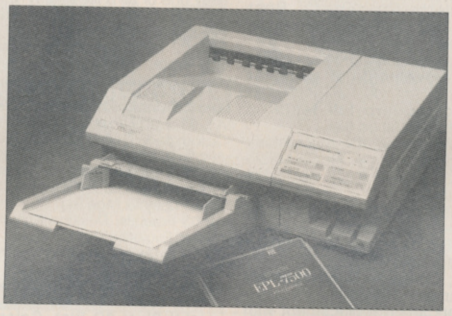
The printer can be hooked up by either its serial, parallel or Appletalk ports. The Amiga and ST, like most machines, use the parallel port to transfer data to the printer. Apple Macintoshes would also be able to use the built-in Appletalk interface. Two computers can be connected to the printer at once, so long as the Appletalk and serial ports are not used simultaneously.

Several disks are supplied with the printer for the PC and Macintosh. They contain drivers for applications software to use the printer's own characteristics. Amiga and ST owners who want to use the printer can use its Postscript and HP Laserjet II emulations. Most applications software includes drivers for the HP Laserjet II, whereas Postscript support is mainly included with serious word processing and desktop publishing packages.

POSTSCRIPT SOFTWARE

AMIGA
Pagestream 2.1, Professional Page 2.0

ATARI ST
Pagestream 2.1 (out soon) *Saxon Publisher* (see ST Column on page 18 for more details), *Calamus*.



• Epson's first Postscript laser printer is physically large compared with other printers, but does its size correspond with ithe number of features it offers?

IN CONTROL

A liquid-crystal display (LCD) shows the printer's settings. Arrow keys on the printer's control panel switch between different options, such as the interface the printer is being controlled from, how fast it's communicating with the computer and by what method the paper is being fed.

Once the control panel is learnt, the printer's settings are easy to change. There are two different menu selections to work from, which access other straightforward sub-menus. The LCD screen is informative and spells out problems when they arise.

However, solving those problems is another matter. While nothing drastically wrong happened during the review period, the problem section in the manual isn't overly helpful at doing what it's there for.

One potential problem for Postscript printers in general is that they need a lot of memory to store and subsequently print page information. This isn't a problem with the Epson as it comes with 2Mb as standard which is about the minimum usable amount for desktop publishing. Postscript printers with less memory can still work, but it would take a lot longer for the page(s) to be set up and printed.

The imaging cartridge the Epson uses is supposed to last for 6,000 pages, which, Epson estimates, is about six months. Replacement cartridges cost £119, which is a fairly standard price.

PUT OUT BY SOME OUTPUT

Print quality in Laserjet mode was not too impressive. Both text and graphics printed at the highest resolution (300 dpi) did not come out too well – the graphics looked jagged. Text wasn't very well defined either, especially when taking into account how long it took to process. It must be said though, if you are going to buy a Postscript laser printer then Laserjet emulation would only be a secondary consideration – it's just nice to know it's there.

However, in Postscript mode the output looked much better and printed considerably faster. This illustrates the ability of both the page language and the printer. Postscript files are sent to the printer in bursts of data, the printer then processes it and prints it soon after. Even files of over 320K took just over two minutes to send, process and print. In comparison to other Postscript printers this is quite impressive.

For text output, there are 35 standard Postscript fonts included. That is the standard number supported by Postscript printers. Other fonts can be downloaded by PC applications, including *WordPerfect* and Microsoft *Word*, or can be defined by the user to be compatible, but the manual doesn't go into this.

PAGE BREAKING OFF

Epson's EPL-7500 is a good printer for Postscript printing. It is fast and the print quality is very good. In Laserjet mode it's not quite so good, but in a Postscript printer this feature would be useful to have, and probably not essential. In terms of its price – £1,999 – it costs a lot more than other non-Postscript printers. This added cost can be explained by the Postscript feature which has to be licensed from Adobe. However, in terms of output quality this extra expense is worthwhile. ■

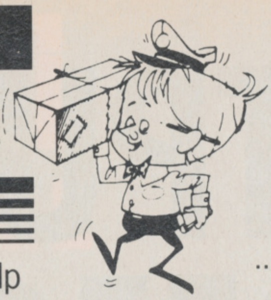
THE BOTTOM LINE

FOR
▲ Postscript compatibility
▲ Large amount of memory as standard
▲ Fast in Postscript mode
▲ Easy to use control panel

AGAINST
▼ Large footprint
▼ Slow in Laserjet mode
▼ Paper feeding sometimes awkward

PRICE: £1,999

BYTEBACK



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10 disks + file box	£9.99
additional disks	99p

(2D = 2nd Drive required)
(Mb = 1 Megabyte required)

GAMES

AG.01Star Trek; Superb strategy game. Digitised graphics! (2D-Mb-3 disks)
AG.02 Various; Gravewars, Jackland, Pacman, Othello, Empire, Hanoi...
AG.03 Star Trek (Agatron); Strategy game - Tobias Richter. (2D-Mb-2 disks)
AG.04 Monopoly; full version of the classic property trading game!
AG.05 Pacman 87; Multi level version of this addictive arcade classic.
AG.06 Various; Cosmoroids, Amoeba, Crazy Eights, Blackjack, Backgammon, Daleks, Yahtzee, Stone Age etc...
AG.07 Board and Card games; Cluedo, Othello, Klondike and Cribbage.
AG.09 Puzzle Maker; Jigsaw puzzles from IFF files. Plus Puzzle Pro.
AG.10 Space Invaders; Arcade Classic version! Plus: Lander, Amoeba...
AG.11 Tennis; excellent shareware sports simulation (Mb)
AG.14 Flascheiber; Boulderdash style game. Almost Commercial quality!
AG.15 Paranoid game; Arkanoid style, including a screen designer.
AG.16 Castle of Doom; Adventure game with graphics - beginners level.
AG.17 ST Bash; Space Invaders style shoot-em-up, aliens are Atari ST's.
AG.18 Golden Fleece; Infocom standard advanture. Plus: Tron; 2 Player Light cycle game. Train; Railway designer. Star Fleet, Kamikaze Chess etc...
AG.22 Return to Earth; Elite style Space trading game, digitised sound.
AG.24 Drip; Arcade quality game with digitised sounds and smooth sprites! Plus: China Challenge, Frogger etc.
AG.26 Zerg; Ultima style Role Play. Plus: World; Infocom type adventure. Daleks, Callisto, Puzz, Pontoon...
AG.27 Star Trek (USA); Strategy game. Captain the Enterprise. (2D-Mb-2 disks)
AG.28 Quattro; Tetris style. China Challenge; Shanghai style puzzle game Plus: Breaker and Asteroids.
AG.29 Chess; Superb Multi Featured! Titles, Tetriz Two, Battleships etc...
AG.30 Twintris; Superb Shape dropping game! MUCH better than original!!!
AG.31 Simpsons; vertical scrolling shoot-en-up style game! (SEUCK)
AG.32 Legotris; another Tetris style game, amusing digitised sound effects
AG.34 Tile Game; AMOS games creator variation on the old 16 puzzle.
AG.35 Cave Runner; Commercial quality Boulderdash style game! Excellent!
AG.36 Wizzys Quest; Professional quality arcade puzzle game.
AG.37 Rings of Zon (Vol.1) Ultima style fantasy/strategy game...
AG.38 Star Trek - Arcade game; SEUCK produced scrolling Shoot-Em-Up.
AG.39 Wacko in Wonderland; Platform game with large Graphics! Cute!
AG.40 Metagalactic Llamas; Classic Commodore 64 game by Jeff Minter!
AG.41 Wet Beaver; Version of original tennis game with digitised sound (Mb)

UTILITIES

AU.01 Jazzbench; Workbench upgrade with many indispensable features!
AU.02 UEdit; Excellent file editor, a vast improvement on Ed!
AU.03 QL Emulator; plus 2 data disks packed with files. Superb! (3 disks)
AU.04 Amiga Spell; Spelling checker, compatible with most Word Processors.
AU.08 Various; Starchart: 600 stars & galaxies. TXED: editor/word processor.
AU.09 Midi Tools: Midi Keyboard; Five octave, mouse operated keyboard... Prochange; change Midi channels etc.
AU.10 Graphic utilities; Fontfixer, IFF Converter, Palette Converter... Boot utilities: Bootext, Bootup. Plus: Memcheck, Disksalv, Dragpack
AU.11 Starchart; Astronomy program giving positions and movements of all major constellations!
AU.13 Visicalc; Superb full featured Spreadsheet with manual on disk.
AU.14 Various: Amcat; cataloguing system, Icontype; change Icon type, Recoverable RAMdisk, Spell Checker, Black Book, DX Synth voice library...
AU.15 Dope Intro maker; Create Demos with this user friendly, package.
AU.17 D Copy; Excellent disk copier similar to X Copy, Good Nibble mode!
AU.18 North C; Complete C Environment for the Amiga! Amazing value!
AU.19 SID; Workbench replacement with easy file handling, improved DMouse window control and many more features
AU.20 K.O. The Virus; Virus detectors and killers! Includes; Virus X 4.1
AU.21 Avoiding CLI; Lots of useful utilities otherwise only obtainable through CLI; FixDisk, QuickCopy...
AU.22 Text Plus; Word Processor (v2.2) Very professional program with many commercial quality features!
AU.23 Word Wright; Word Processor. Plus: Amiga Spell; Spell checker!
AU.24 Spectrum Emulator; Run some Spectrum games on your Amiga!
AU.26 Complete C Manual; packed with info on C programming, 11 chapters plus 70 executable examples! (3 disks)
AU.27 Amibase (v3.76); Professional quality, multi-featured database program... Recommended!

CLIP ART

AC.01 Deluxe Paint; lots of quality pictures in low, medium & high res.
AC.02 Pagesetter Art; Animals, Food, Computers, Fantasy, Holidays...
AC.04 IFF Alphabets; 30+ screens of character sets and surfaces...
AC.05 Animals, Anatomy, Buildings, Christmas, Construction...
AC.06 Cartoons; Comic pictures of people, animals, funny objects...
AC.07 Holidays, Home, Flags, Flowers, Miscellaneous...
AC.08 Music, People, Places, School, Religion, Symbols, Weddings...
AC.09 Signs; Titles, Logos, Headings, Athletics, Bowling, Boxing, Football, Cricket, Racing, Fishing, Horses...
AC.10 Teddy Bears; ideal for Present Labels, Greetings Cards etc.. Plus: Silhouettes; lots of shadow pictures.
AC.11 Nightclub, Vintage Cars, Bikes. Computers, Boats, Office, Industrial.
AC.12 Colour; Occasions, Transport, Signs, Electrical, Architecture...

SOUNDTRACKER

SND.01 Soundtracker; Four versions of this favourite Music creation program.
SND.02 Soundtracker 4; alternative version + instruments disk. (2 disks)
SND.03 Sound Monitor; 20 Demo scores + instructions in this superb sound package! Extra RAM and Drive useful. Plus: Instruments disk. (2 disks)
SND.04 MED Music Editor; Soundtracker style music creator! Easy to use!
SND.05 Soundtracker 8 Track; Superb! Plus converter for 4 track files...
STI.01 to STI.08 Digital Soundtracker samples! 8 disks packed with 100's of files! (Buy one or all 8 for £7.99)
STS.01 Sampled sound effects to use instead of instruments!
STS.02 Longer samples, many from films, Star Wars, 2001, Raiders...

EDUCATIONAL

AE.01 Blackboard Maths, Concentration Colourpad, Cat & Mouse, Galactic Worm Animated Pointers, Shark... (Age 5+)
AE.02 Spellquiz, Wheel of Fortune, Tug 'o' Word, Flower Garden, Stepping Stones, Maths Test, Puppypix (Age 5+)
AE.03 Fractals, Desktop Calculator, Function Plotter, Evolution (Age 11+)
AE.04 Gravitywell, Weatherman, Gravsim, Airfoil... (Age 11+)
AE.05 World data Bank; CIA world map with political boundaries, view from anywhere, any height! Plus: 3D Plot, Calendar Factory, Sherlock (Age 11+)
AE.06 Talking Spelling Tutor, Speech Toy, German Language Test, Study File, Card System, Globe, Elements, Geotime, Text Utilities (2 disks) (Age 11+)
AE.07 Educational graphics; Technical illustrations; Biology, Astronomy etc. Some animated (eg. pumping heart) Includes viewing programs. Or load into Deluxe Paint etc. (Age 9+)

FONTS

AF.01 Cosmopolitan; Rangers, Peignat, Avant Guard, Aidous, Celtic etc...
AF.02 Fancy; Hollywood, Park Avenue, Broadway, Camelot, Courier, Ham...
AF.03 Publishers; Helvetica, Akashi, Andover, Bookman, Boxie, Times...
AF.04 Various; Unusual, Videofonts, Large & Small fonts... Utilities.

WORKBENCH

AW.03Icons; Music, Ram, Naughty, Jet Icons. Plus: Utilities, Colourbench
AW.04 Icon Development; Design Icons with Deluxe Paint! Examples included!

SLIDESHOWS

AS.01 Boris Vallejo 1; Professional quality graphics in interlaced HAM!
AS.05 Exodus Real 3D show; 9 very impressive Ray traced pictures.
AS.06 Swimsuits; Great pictures from the U.S. Sports Illustrated mag.
AS.12 M.C. Escher; Animated slideshow of Eschers paradoxical artwork...
AS.20 Slideshow Construction; Pictures scroll up/down, fade in/out! etc...
AS.21 Fantasy; Stunning full screen pictures and superb soundtrack!
AS.22 Viz; Digitised pictures from the wonderful Viz magazine.
AS.23 Agatron Slideshow 10; Ray Traced pictures of Star Trek ships including shots from T. Richters impending video

HELP!

AH.01 Adventure Game Solutions; More than 100 including: Dungeon Master, Future Wars, Ultima 1 to 5, Sierra, Infocom, Bards Tale, Zak MacKracken, Maniac Mansion, Rainbird...Every Adventure players dream! (2 disks)

DEMOS

AD.01 Walker 1; Digitised animation of Star Wars Imperial Walker (Mb)
AD.02 Walker 2; Digitised animation of Walker and helicopter! (Mb)
AD.04 Probe Sequence; Incoming video pictures from an interstellar probe landing on an alien planet! Amazing!
AD.13 Walking Cat; Amazing Revolving digitised animation of walking cat!
AD.16 Ghost Pool; Animation of a pool game with invisible players!
AD.18 Puggs in Space; Amusing cartoon of alien creature exploring Earth!
AD.21 Busy Bee; Amazing Sculpt 3D animation of a large flying Bee! (Mb)
AD.22 Democreators. Create your own demo's with; Bootwriter, Bootmaker, Bootboy, Boot generator etc...
AD.23 Ship and Sphere; Ray Trace film of space ship and glass sphere. (Mb)
AD.24 NewTek Demo Reel 3; Incredible professional demo of NewTek product range features superb sampled sounds, digitised animations... (Mb-2 disks)
AD.25 The Run; 3D film of Lotus chase through traffic with police car! (Mb)
AD.28 Stamp Collector; Animation of magnifying glass and naughty stamps!
AD.29 Predators Megademo; Brilliant demos including 2 games! (2 disks)
AD.32 Vision Megademo IV; Superb Digitised music and sound effects!
AD.36 Kefrens Megademo VIII; 10 demos including; Kill the Beast (Shadow of the Beast meets Xenon 2)... (2 disks)
AD.39 Agatron animations; 3D film of USS Enterprise attacking USS Reliant.
AD.40 Luxor Teenager; Variation on the classic with 2 anglepoise lamps!
AD.41 RGB; Badgekiller competition winner! Produced with Director! (Mb)
AD.42 Comic on a disk; whole graphic novel, page by page, on screen!
AD.44 Laurel and Hardy; Digitised clips from various films! (2 disks)
AD.45 Star Trek, Dry Dock demo; The highly praised Ray Trace masterpiece!
AD.46 Stealthy Manoevre II; Cartoon style Stealth Fighter animation.
AD.47 Walker Demo; The incredible 2 Megabyte animation (2Mb - 2 disks)
AD.48 Amy V Walker; Amy the Squirrel chases AT-AT with Monkey Wrench! (Mb)
AD.49 Budbrain Productions; Quality animations including Movie! (2 disks)
AD.50 Budbrain Demo 2; Great sound, great graphics, another classic!
AD.51 Fishtank demo; Animation of sea creatures miming in time to music!
AD.52 Popeye meets Beach Boys; Very amusing singing combination...
AD.53 Iraq demo; Mini film involving Saddam Hussain and John Major!
AD.54 Simpsons; Digitised: Do the Bartman plus great Bart slideshow!

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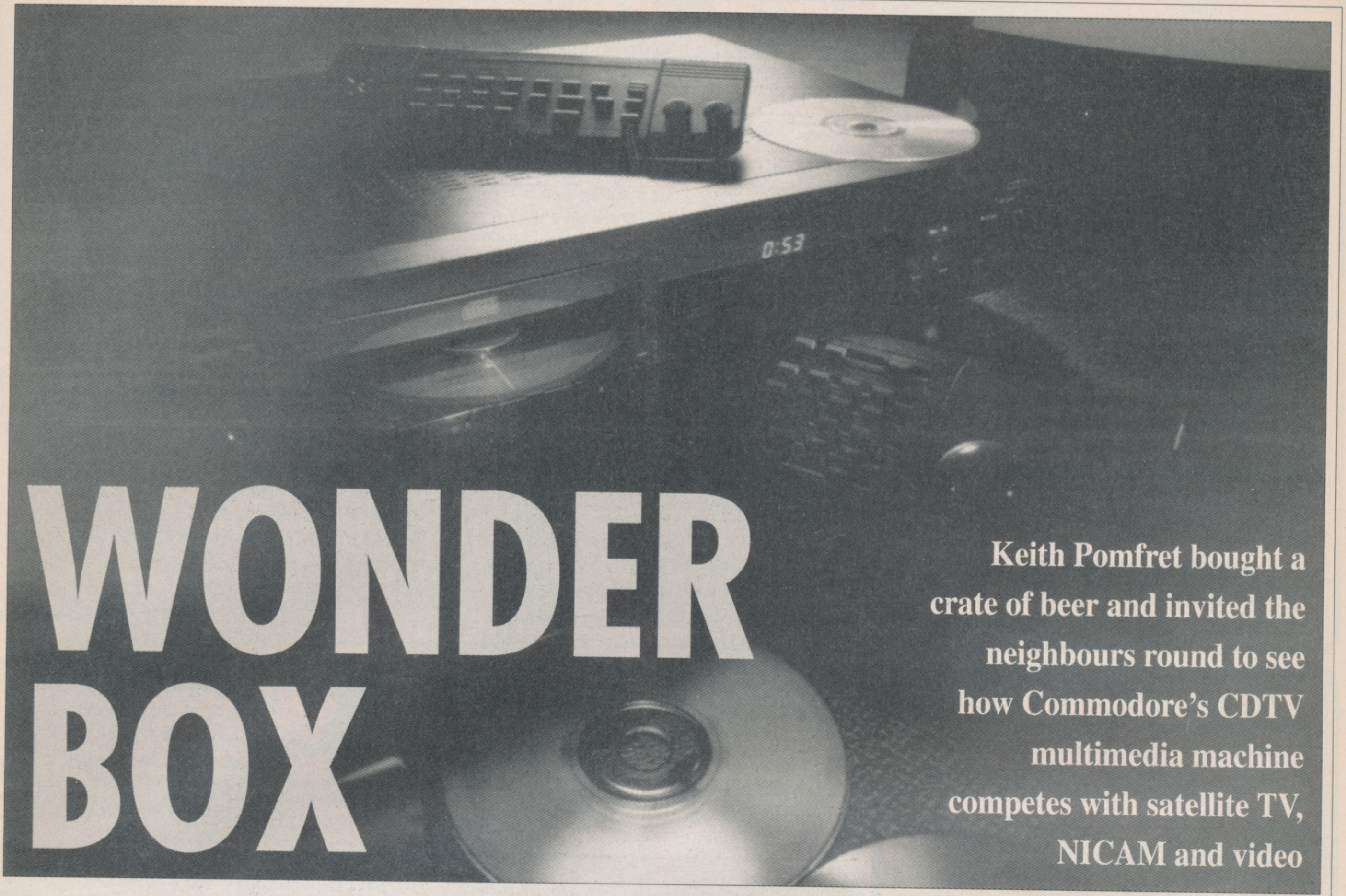


WONDER BOX

Keith Pomfret bought a crate of beer and invited the neighbours round to see how Commodore's CDTV multimedia machine competes with satellite TV, NICAM and video

PRODUCT: **CDTV**
MACHINE: **Interactive Multimedia Machine**
FROM: **Commodore UK**
CONTACT: **High Street consumer electronic retailers**
COST: **£599**

Imagine a machine that can hold the entire output of The Beatles and any other 40 famous groups, as MIDI files on one disk. This machine can also teach your children to spell, count, add up and even talk. It can interact with you offering a world of options in which you make the decisions and it carries them out.

You can be Sherlock Holmes, sniffing out the Hound of the Baskervilles, remix your favourite CD, play games, build cities and look up any of over 25,000 entries in an encyclopedia that gives you more than words. Choose a subject and as well as text there may be a picture or even a sample of sound.

THE NEXT GENERATION

This is CDTV. It comes in a matt black box shaped like a video recorder and requires nothing more strenuous than the ability to push a button on a remote control to bring it to life. A removable caddy at the front holds a CD which can be simple audio, CD with graphics or interactive multimedia. When Commodore announced CDTV (Commodore Dynamic Television) it chose the mid-way multimedia path which utilises the best existing technology to give you an interactive environment.

The CDTV has a CD-ROM drive for mass storage of video, sound and graphics. For its logic and control, it uses the tried and tested technology of the Amiga. All this in a box shaped like and controlled in the same way as a video recorder is Commodore's pitch at the next generation of interactive learning and entertainment.

If you switch on a video, player or a TV set you are entertained but not necessarily stimulated into action. The point of a multimedia system like CDTV is that it is open-ended. At its simplest, it can be used to play an audio CD. In this mode, you don't even need to connect it to a monitor although the clever graphic display on the monitor makes it easy for even the most techno-paranoid to persuade it to divulge the secrets of their favourite disc.

> **Instead of watching a production for pure entertainment, you are able to 'get in' and make decisions**

One step up from audio CD is CD with graphics (CD + G). This has been widely publicised but not much has been seen. The occasional video track welded on to an audio CD has been its limit until CDTV. Now we are seeing a wide range of discs planned from training packages, where a voice-over is illustrated on screen, to Karaoke discs, where the words are displayed in time with the music.

GET INTERACTIVE

The area in which CDTV shines most is as an interactive machine. Instead of watching a production for pure entertainment, you are able to 'get in' and make decisions. A CDTV disc has upward of 600Mb of storage space and because a CD is digitally catalogued, this information can be accessed at any point within seconds. Unlike normal entertainment such as a video, there's no need to run a title from end to end and making a choice from an on-screen prompt can access anywhere on the disc.

A simple application would be a disc with a program of learning on it. As well as utilising the computing power of CDTV, it could contain a vast array of choices on the 600Mb disc. More complicated titles could have anything from an audio visual encyclopedia to a complete interactive virtual world.

Any machine imparting entertainment, information and data can only be as strong as the titles that are available on it. Whereas on a computer we say software, in multimedia the buzzword is title. CDTV has hardware from the Amiga so, there is bound to be a confusion over whether it is running a 'title' or 'software'.

HOME TRIAL

We took the CDTV home, made room for it in among the NICAM boxes, satellite decoders and video recorders. We fed its output to a huge 25-inch TV monitor and a stereo amplifier and speakers.

The Amiga heritage of the CDTV means that it can be connected to just about anything. Video ports enable connection to a standard television, a composite monitor or an RGB monitor.

Using CDTV with a regular TV takes the sound to the TV via the modulated signal but to take advantage of the sound options available, a stereo amplifier and speakers are necessary.

A pair of stereo phono outputs take the audio signals from CDTV and a headphone socket on the front of the cabinet gives private listening via any headphones with a standard 1/4 inch stereo phone jack.

Most users buying a CDTV as an extension to their TV and video won't need to use any more of the connectors than those that give basic video and audio, but people wanting to dig deeper and utilise the computer hardware within CDTV will be grateful of ports for keyboards, peripherals, floppy disks, modems, printers and an internal expansion designed to take a genlock.

The computer side of CDTV is completed with a slot for memory expansion to complement the 1Mb of on-board RAM. This could be used for RAM or ROM cards from 64K to 512K.

WHAT THE PEOPLE SAY

We set the CDTV up as part of the normal living room entertainment system to get the reaction of the neighbours. John, 48, whose hobbies are video and cowboys and is currently unemployed, was impressed. He settled back on the settee and casually cast his eye over the CDTV remote control.

"Just like the video," he said. The encyclopedia impressed him and he soon came to grips with the idea of music and pictures to complement the words. A snatch of classical music in the entry for a composer brought a gleam of recognition: "That's an advert on the TV," he said.

We dragged John away from the CDTV for long enough to let his sons Steve and Mike get to grips with *Lemmings* and a couple of the interactive adventure games. Control of a game can be passed from player to player with the infra-red remote control. Although not a very aerodynamic projectile, the remote control was accurate and light enough to throw across the lounge.

MORE THAN A FANCY TELEVISION

It took a long while to persuade the boys to go home and when they did finally go after 'just one more game', there was no respite. We invited in school teacher Andy to evaluate the educational aspects of the machine.

He'd seen it advertised in the Sunday papers but admitted to confusion: "The ads get over the fact that it's good and state-of-the-art but they don't actually say what it is," he mused. A couple of hours working through the educational titles confirmed that it would be welcome at St Bede's RC primary school. "The only problem I'd have justifying it, is the fact that it's difficult enough getting cash for a computer never mind a fancy television," he said.

We plugged in a disk drive, added a keyboard borrowed from an Amiga B2000 and he went away thoughtfully composing a letter to the headmaster.

KARAOKE PARTY

Musician Paul Dobie thought that the CDTV's MIDI ports were a good idea. "The thing that's made the Atari ST popular amongst the muzos is the MIDI. This machine blows Atari's offering into a corner. It'll take some work to make the sequencers as good as those available on the other machines, but the huge CD drive more than makes up for it," he said.

He pointed to the slot for a memory card: "From the 10,000 songs you could have as MIDI files on a CD, you could load say a 40 minute set into that. As you arrived at a gig, you could decide on what's appropriate for the audience and build a set on site."

We pointed to the Karaoke discs and we were in business. Paul plays a hotel gig on a Saturday night and between his sets normally puts on a tape. The CDTV, a couple of Karaoke discs and a professional sound system had the 200 plus audience singing along. The CDTV plugged into the hotel's TV network and if only there'd been a few more Karaoke discs...

The more astute CDTV guinea pigs guessed that there was a computer somewhere under the matt black cover and when shown its Amiga capabilities, no-one was surprised. The overall impression was that CDTV is a good idea, fun to use, easy to set up and start and was an ideal complement to a TV and video set-up. Its simple user interface and remote control meant that it was comfortable to use from any where in the room.

There are a couple of dozen strong titles, a dozen or so questionable ones and a whole multitude of Amiga software that will run on it. If the developers stick with it, CDTV will be an enormous success. The only other possible home multimedia machine in the frame is the Philips CD-I, the launch of which is a year away, and the anticipated price will be twice that of a CDTV. ■

IS IT A BIRD? IS IT A PLANE? NO, IT'S CDTV

TITLES

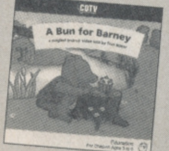
Before you even look at titles designed for CDTV, there is a vast array of existing CDs that will run on the CDTV. Any conventional audio CD or CD with video will run.

The titles that are CDTV specific fall into two groups. There are those based on existing Amiga software, and those designed for the interactive multimedia environment.

Here are some of the first CDTV titles to arrive:

CDTV
HUTCHINSON
ENCYCLOPEDIA
PAL VERSION

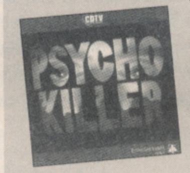
● *The Hutchinson Encyclopedia* With the disc in the CDTV, a three minute guided tour takes you through the features of the encyclopedia. It is based on the Hutchinson single volume encyclopedia and offers pictures, maps, sound , music, help, and information. The option of sound and video with the description gives an encyclopedia with the ability to create a complete descriptive archive. Commodore is quite rightly proud of Hutchinson and cites it as a true example of interactive learning.



● *A Bun for Barney* is an interactive story for young children. The computer graphics combine with a story told by former Doctor Who, Tom Baker and enables the child to join in a decision-making process.

The story culminates in the making of iced currant buns and there's even a recipe for making them.

***A Bun for Barney* is an educational title for children aged three to six.**



● The bloodstained cover of *Psycho Killer* promises a bloodbath of gory entertainment which it fails to deliver. The idea is that you wander through a virtual world of video snapshots, collecting clues and evidence to bring the villain to book.

The quality of the images and the somewhat quirky interface make it an infuriating task. This is a pity because, this is the sort of puzzle solving that could make much better use of CDTV's features

With more attention to quality and detail, this interactive adventuring could become a cult on CDTV.

● *Sim City* needs no introduction as it is already available as software on most home computers. It gains playability from the vast amount of data that can be stored on a CD and the infra-red remote control makes it simple to play from the armchair.

● The *Fred Fish Collection* on CD-ROM is more of a computer buff's Christmas present than a true multimedia title. It is a collection of the first 400 or so Fish disks for the Amiga. These represent a huge collection of Public Domain software running to hundreds of megabytes but they are first and foremost computer titles. A lot of them need a QWERTY keyboard to run and although it's useful to have so many programs in one tidy package, someone buying CDTV as a consumer electronics product will be baffled at a product needing the Amiga Workbench to run properly.

● *CD Remix* (DJ in a box). This is an interesting editing title that lets you edit, cut and paste snatches and snippets from audio CDs to produce your own mixes. The instructions take you through the features of the *CD Remix*, showing you how to cut, edit and remix your CD. If you're lucky (?) enough to own a copy of Madonna's *Immaculate Collection*, there's a demo which shows you the power of interactive mixing.

Women in Motion
EADWEARD
MUYBRIDGE

● *Women in Motion* is a late 19th study of the female form by Eadweard Muybridge. It is a collection of early photographic animations of scantily clad and naked ladies going through the motions of such mundane tasks as walking, climbing and throwing water all over each other. It is cast as Art and leisure entertainment for adults but is more of a curiosity than a vision of Victorian erotica.

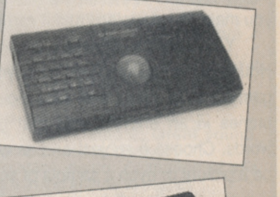
● Other interactive titles available include *Wrath of the Demon*, badged as entertainment, *Hound of the Baskervilles* which casts you in the role of detective, Sherlock Holmes and *Lemmings*, the infuriating cutesy puzzle game that has taken all of the major computer formats by storm this year.

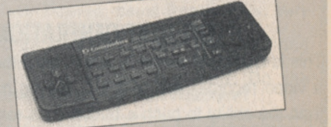
● The CDTV can also read and play CD + G discs with graphics as well as sound. While looking CDTV over, we ran a couple of Karaoke discs on it and were impressed enough to take it along to a gig on a Saturday night.

***Hutchinsons* and *Lemmings* come in the box with CDTV. All of the other titles are available through companies distributing CDTV.**

Titles vary in price from around £15 to upwards of £50 for some of the heavyweight serious titles.

ACCESSORIES





The accessories due for CDTV area keyboard, infra-red mouse (called hamster because there's no tail), joysticks, tracker balls, disk drives and other add-ons yet to be announced.

COMPETITION

At present CDTV is the only player in the field. Philips is standing in the wings with the CD-I system which has a more comprehensive specification than CDTV, but it is a year away and more expensive.

Commodore plans a CD-ROM drive for the Amiga which may in itself prove to be a competitor for CDTV.

CD-ROM will surely help the development of titles, but could curb sales of the CDTV machines.

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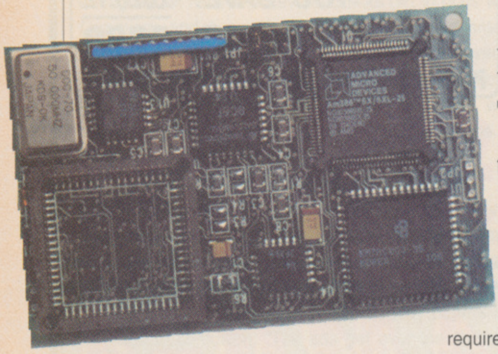

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ABC audited circulation July-December 1990:20,204 copies per week
We regret we cannot enter into any personal correspondence. Technical enquiries should be addressed to Tech Tips at the address below. While every care is taken in the preparation of *New Computer Express*, Future Publishing cannot be held responsible for the consequences of any errors that may occur.
• Subscriptions: The Old Barn, Somerton, Somerset (0458) 74011
• Printed by Redwood Press, Melksham, Wilts
• Distributed in UK and Eire by Future Publishing (0225 442244), rest of world by Comag (0895 444055)
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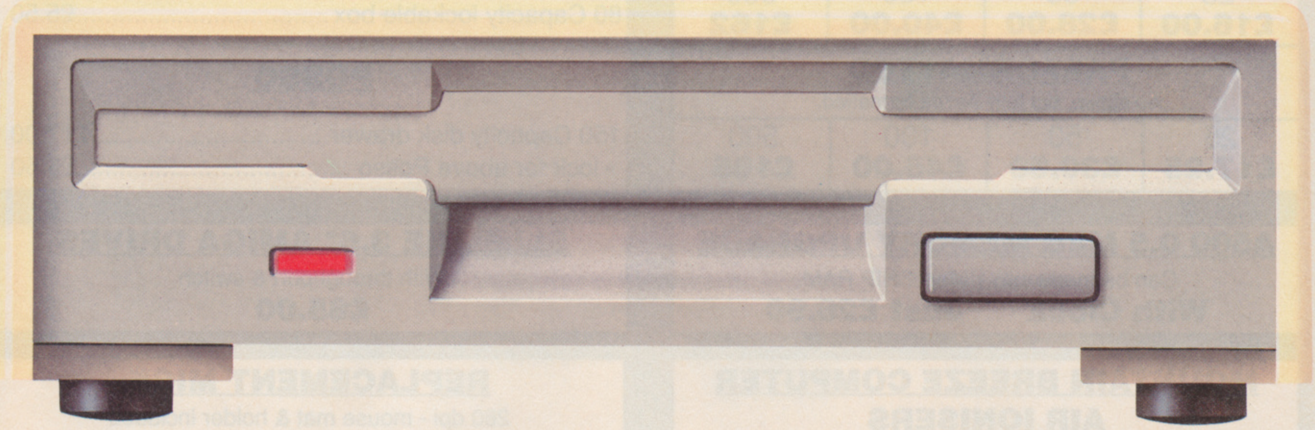

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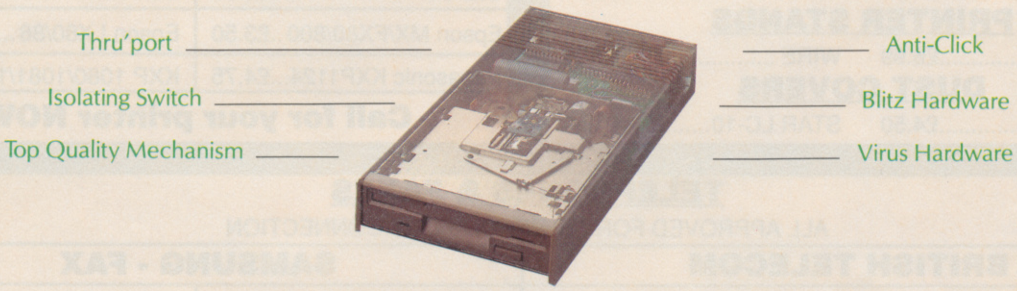

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